

SOUTH DAKOTA STATEWIDE LONG RANGE TRANSPORTATION PLAN

Prepared by:

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Project Development Office

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Chapter 1: Mission, Vision, Goals and Purpose



Departmental Mission

To provide a safe, efficient and effective transportation system.

Vision

As a responsible and conscientious transportation resource for the taxpayers of South Dakota, the Department of Transportation will diligently work to provide transportation facilities that meet the needs of the traveling public. Our eyes are on the future. We are a proud, resourceful and energetic entity that will continue to strive to meet the ever changing needs today and for every day to come.

Goals

The goals of the South Dakota Long Range Statewide Transportation Plan are to:

- ◇ Preserve and maintain South Dakota's transportation system
- ◇ Promote transportation safety
- ◇ Support access and connectivity to important facilities like grain elevators, ethanol plants, pipeline terminals, wind energy facilities, airports, freight terminals, large employment and retail generators, and intermodal facilities
- ◇ Promote transportation efficiencies within and among all transportation modes.

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- ◇ Promote transportation facility enhancements within our authority and financial constraints
- ◇ Support economic growth and tourism
- ◇ Provide mobility and transportation choices
- ◇ Preserve South Dakota's quality of life
- ◇ Promote transportation security

Purpose of the Statewide Long Range Transportation Plan

The South Dakota Department of Transportation (SDDOT) seeks to improve the movement of people and products, to encourage competition and lower transportation costs within and among the transportation modes, and to facilitate economic growth. This plan will accomplish these objectives by identifying opportunities, new trends, new technology and by depicting and facilitating the planning and coordination process that will allow the Department to take advantage of these factors.

The purpose of the Statewide Long Range Transportation Plan is to guide decision-making, monitor transportation challenges and opportunities, strengthen beneficial intermodal relationships, and ensure that projects reflect fiscal and political reality and long-term financial sustainability. Instead of completing a detailed 20 year forecast of needed transportation projects and assume it is correct, this plan will guide annual decision-making for the Statewide Transportation Improvement Program (STIP), which is a five year list of transportation projects scheduled for completion. In addition, it will guide the development of goals, strategies, and actions outlined in the SDDOT Strategic Plan which will direct day to day decisions. It will also help coordinate actions with the Metropolitan Planning Organizations (MPOs), Tribal governments, local governments and other public agencies, citizens, and providers by identifying issues of mutual concern and specifying the coordination process that will be used to address the issues.

This plan will outline general actions which must be taken to address these opportunities and trends. However, the detailed description of future conditions we desire and the methods for achieving them will be depicted in the Department's Strategic Plan, the STIP, the State Aviation System Plan, the State Rail Plan, the Strategic Highway Safety Plan, the State Highway Needs Analysis, the Local Roads Needs Study, the Public Transportation Needs Study, the Urban Streets Needs Study, the Highway Systems Studies, the MPO's Long Range Plans, the Intermodal Data, the Financial Forecasting Study, Corridor Studies, and other special studies. All of these items are by reference a component of this Long Range Statewide Transportation Plan.

The South Dakota Statewide Long Range Transportation Plan is both intermodal and multi-modal in nature. We use the two words interchangeably and look collectively at all modes of transportation by examining linkages, interactions, and movements among transportation modes through a process called intermodalism. This process provides any mode an equal opportunity to serve the transportation need, while balancing the planning considerations, public input, and financial constraints.

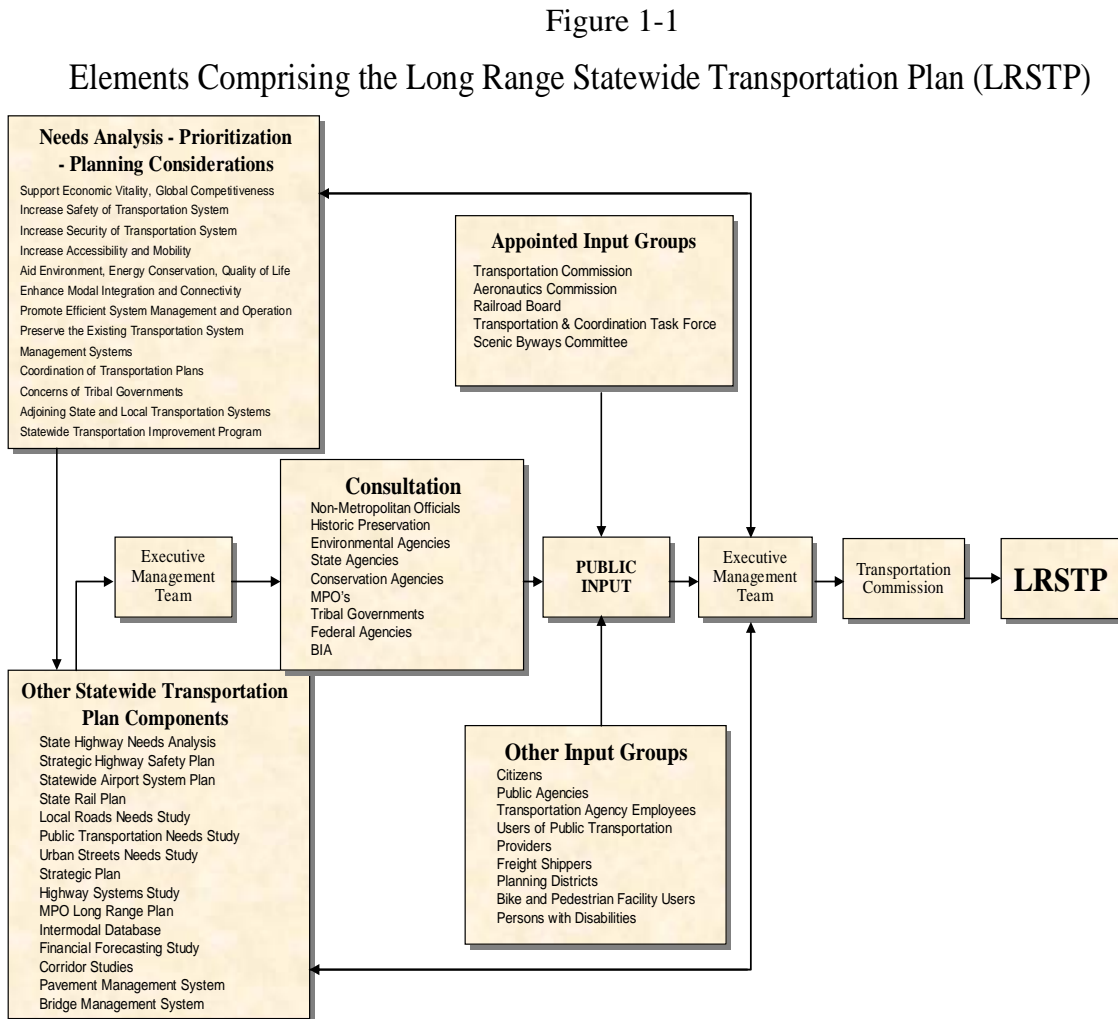
This plan is not a long-range STIP, project plan, or a plan proposing short-term actions. Other components of the planning process will perform these functions. This plan provides an overview of the transportation system and trends in South Dakota which will

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be used as a guide to develop other plan components and solutions to transportation problems in the transportation planning process. It will be used to ensure these other elements are consistent with one another and the long-range plan.

The Statewide Long Range Transportation Planning Process

A diagram showing the various components of this plan and the process used to create it is shown in Figure 1-1.



Components of the Statewide Long Range Transportation Plan

The SDDOT promotes intermodal transportation. As technology progresses and needs change, new opportunities in transportation must readily be identified and incorporated into the intermodal system for items like access to unit train grain terminals, airports, ethanol terminals and transit. Once identified, they can serve as an integrated transportation system. The Bicycle and Pedestrian Plan is contained in this plan. In

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addition to this plan, the other components of the Long Range Statewide Transportation Plan function together to aid intermodal decisions. The other components are listed in Figure 1-2. This plan will make sure the process and the functions are coordinated.

Figure 1-2

Other Long Range Plan Components
Strategic Highway Safety Plan
ADA Transition Plan
State Highway Needs Analysis
South Dakota Aviation System Plan
State Rail Plan
Local Roads Needs Study
Statewide ITS Architecture Plan
MPO Long Range Plans
Financial Forecasting

A detailed explanation of each of the components listed in Figure 1-2 follows:

- ◇ **Strategic Highway Safety Plan** – This plan focuses the State’s safety partners on a coordinated and comprehensive effort to improve highway safety. The plan was developed through coordination with local, state, tribal and federal agencies; engineers; law enforcement officials; educators; emergency medical services officials; metropolitan planning organizations; safety advocacy groups; and others concerned with highway safety in South Dakota. It offers proven and experimental strategies to reduce traffic crashes, injuries and fatalities.
- ◇ **Americans with Disabilities Act (ADA) Transition Plan** – This plan establishes a specific timeframe for the department to bring any services, facilities or programs into compliance with the Americans with Disabilities Act. Much of the ADA transition plan was addressed in the early 1990’s. The plan was updated in 2009 to address any remaining non-compliant pedestrian facilities in the public right of way. The department is in the process of programming specific projects to address specific features such as missing or non-compliant curb ramps and access to pedestrian push buttons. Sidewalk facilities will be addressed with construction projects. The department has reviewed all pedestrian facilities, will continue to update the plan, along with programming specific projects to bring sidewalk facilities into compliance. SDDOT will continue to make ADA accommodations in the public right-of-way in conjunction with any alteration or construction project. In addition, the department is reviewing other programs, services and facilities and will continue to update the department’s entire ADA transition plan on a periodic basis.
- ◇ **Statewide Highway Needs Analysis** - This report examines each mile of state highway in South Dakota. It contains an assessment of the condition of the roads and pavement and will be helpful to the Pavement Management System by providing important data for future pavement management decisions. It has a 20 year time frame.

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- ◇ **South Dakota Aviation System Plan** - This plan identifies and addresses the needs of the aviation industry in the state in the short-term (less than five years) and the long-term (20 years). The plan analyzes airport infrastructure needs; the economic impact aviation has in South Dakota; the emerging trends and technologies that impact future airport development; and ways to improve the aviation system as a whole. The plan developed capital improvement plans for every airport. SDDOT is in the process of developing a new airport classification system that may result in funding categories for future development.
 - ◇ **State Rail Plan** - This study analyzes the future of the rail system in the state. In deciding which rail lines to assist, the State Rail Plan outlines several screening criteria, including evaluating the line's impact on the economy. The criteria are used to determine if the rail line is essential to the rail system in South Dakota and qualify for assistance based on criteria. The plan also monitors rail traffic and commodity movements to identify changing trends in the railroad system.
 - ◇ **Local Roads Needs Study** - SDDOT has published a study of the fiscal need along county and local roads, including federally funded roads. This information will help identify highway needs to support intermodal transfers. The study was updated in 2008 and has a twenty year time frame which will ensure that the local road component of the STIP is based in fiscal reality.
 - ◇ **Statewide Intelligent Transportation System (ITS) Architecture Plan** - This plan defines and develops regional ITS architecture for the State of South Dakota. Some of the ITS outcomes are Safe Travel USA, dynamic signs, traffic control, highway cameras and commercial vehicle identification.
 - ◇ **Strategic Plan** - The State's Strategic Plan sets the goals for the SDDOT over the next five years. These goals are broad and general, but the actions are tied to Performance Standards. This plan is updated every year and allows the SDDOT to respond to new trends. This plan, along with the STIP, will identify the yearly decisions needed to implement the Long Range Statewide Transportation Plan.
 - ◇ **MPO Long Range Transportation Plans** – Safe, Accountable, Flexible, Efficient, Transportation Equity Act: a Legacy for Users (SAFETEA-LU) outlines 8 specific elements a Metropolitan Planning Organization (MPO) must consider in the planning process, including preparing a Metropolitan Long Range Transportation Plan. Sioux Falls and Rapid City are scheduled to update their plans by 2010 to follow the five year update cycle. Sioux City approved their plan in September 2006 and will not require an update until 2011. The MPO's Long Range Transportation Plans are a vital part of the Long Range Statewide Transportation Plan and are considered in the planning process, the STIP, and the Long Range Statewide Transportation Plan. As metropolitan areas grow, transportation should be addressed through multi-modal solutions, like transit or car pooling, to curb future congestion.
 - ◇ **Financial Forecasting** - The Transportation Equity Act for the 21st Century (TEA-21) required and SAFETEA-LU extended the requirement that projects and proposals under the STIP, MPO Long Range Transportation Plans, and in the Transportation Improvement Programs (TIPs) be fiscally constrained by reasonably
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expected funds. SAFETEA-LU expanded the requirement to include all projects in these documents be fiscally constrained in the year of expenditure dollars and an inflation factor needs to be part of the STIP, TIPs and MPO Long Range Transportation Plans. Meeting this obligation will be possible by periodic financial forecasts.

◇ **Corridor Studies and Analyses** - Corridor studies and analyses are important components of the Long Range Statewide Transportation Plan. The following corridor studies and analyses, listed alphabetically, are being evaluated.

- Brookings Area Study
- I-190 Corridor Study
- Interstate Corridor Studies
- Interstate Rest Area Evaluation Study
- Keystone Pedestrian Study
- North Sioux City Area I-29 Corridor Study
- Rapid City I-90/LaCrosse Street Interchange and Corridor Study
- Sioux Falls 41st Street Interchange (Exit 77) Study
- Rapid City Omaha Street Corridor Study
- US83 Corridor Study (Rosebud Casino to Mission)
- Sioux Falls I29/I229 Area Corridor Study
- Spearfish Area Study
- Statewide Interstate Interchange Study
- Sturgis Area Study
- Union and Clay County Area Study (Hyperion impacts)
- Various Access Management Plans

All of these components contribute to the Long Range Statewide Transportation Plan and additional ones will be added as they are identified. In an intermodal system, a change in one mode will normally impact another mode. The planning process must aid in understanding the interrelationships among the planning considerations and the modes so that efficiency is achieved. The Long Range Statewide Transportation Plan must be periodically updated to factor in new developments and new interrelationships. This updating process will be conducted in a public forum to achieve a high level of public involvement. All of these elements must be considered in drafting components which implement the plan.

Planning Considerations and Coordination

SAFETEA-LU requires each State to carry out a transportation planning process that provides for consideration of projects and strategies that will:

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1. Support the economic vitality of the United States, the States, metropolitan areas, and non-metropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight;
7. Promote efficient system management and operation, and;
8. Emphasize the preservation of the existing transportation system.

The challenge to the SDDOT is to coordinate the solutions which best balance these considerations and to ensure they are implemented. The SDDOT will meet this challenge by including these planning considerations at each junction of decision making in the development of the Long Range Statewide Transportation Plan, the STIP, and in the Statewide Planning Process.

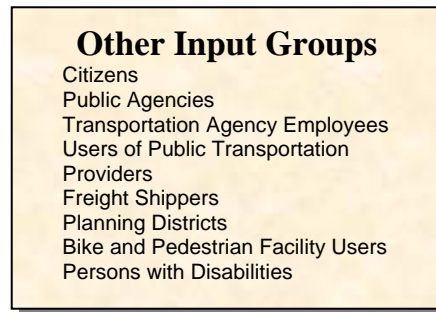
Input Groups and Coordination

SDDOT has emphasized public input and review since the late 1970's. In planning, this input is evaluated to determine if the suggestion has valid merit to pursuing or if the input can feasibly be achieved. As decisions are made, the following should be done to incorporate public input and review:

1. Use the Long Range Statewide Transportation Plan and the STIP planning processes to inform the public about intermodal options and tradeoffs.
2. Use review meetings to gather input and comments, to develop suggested revisions to the Long Range Statewide Transportation Plan.
3. Use input from citizens, public agencies, transportation agency employees, providers, users of public transportation providers, freight shippers, Planning Districts, bike and pedestrian facility users and persons with disabilities to formulate, guide, and coordinate new policies (See Figure 1-3).

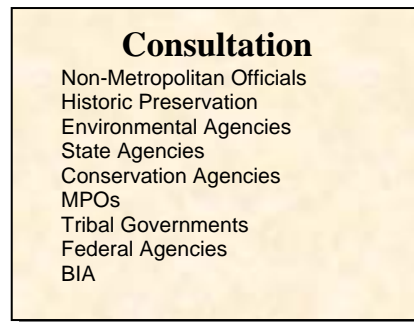
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Figure 1-3



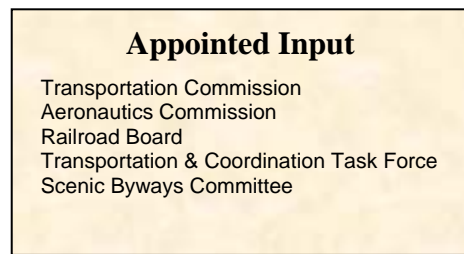
4. Use input from non-metropolitan officials, Historic Preservation office, environmental agencies, state agencies, conservation agencies, MPOs, Tribal Governments, federal agencies, and the BIA received from the consultation procedure identified in the SDDOT Participation Plan (see Figure 1-4).

Figure 1-4



5. Use input from appointed input groups the Aeronautics Commission, the Railroad Board, the Transportation and Coordination Task Force, the Transportation Commission, and the Scenic Byways Committee to update the Long Range Statewide Transportation Plan (See Figure 1-5).

Figure 1-5



The SDDOT will coordinate data collection, analysis, and evaluation of transportation plans with the management systems, other plans, and all the input groups. Transportation plans will be coordinated with other agencies responsible for recreation, tourism, economic development, intermodal facilities, environmental resources planning, corridor preservation, rail planning, airport improvement programs, and social, economic

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employment, energy, environmental, land use, housing, and community development effects of transportation actions.

Public Participation and Coordination Schedule

Figure 1-6 depicts the process and schedule for the Statewide Long Range Transportation Plan. The plan will be reviewed every year but will be updated as needed. The public can always comment on the plan and any updates will go through the participation process. The Department will accept both written and oral comments during the comment period. The public will also be given an opportunity to comment at the Transportation Commission Meeting when the plan is adopted.

The SDDOT conducted public meetings at locations in all regions of the state. Comments were provided and considered in the final Statewide Long Range Transportation Plan. Public input, the underserved and groups having special needs were considered in the final Statewide Long Range Transportation Plan. This document will guide the SDDOT in making transportation decisions for the next 20 years.

Coordination, Decision-Making, and Approval Process

The SDDOT advocates an approach to decision-making where each mode is considered before the most efficient mode is chosen to address the particular transportation issue. This approach to decision-making is intended to avoid inefficient, modal-biased solutions. The SDDOT will follow the public participation process to keep the public informed and gain input to make the best decisions.

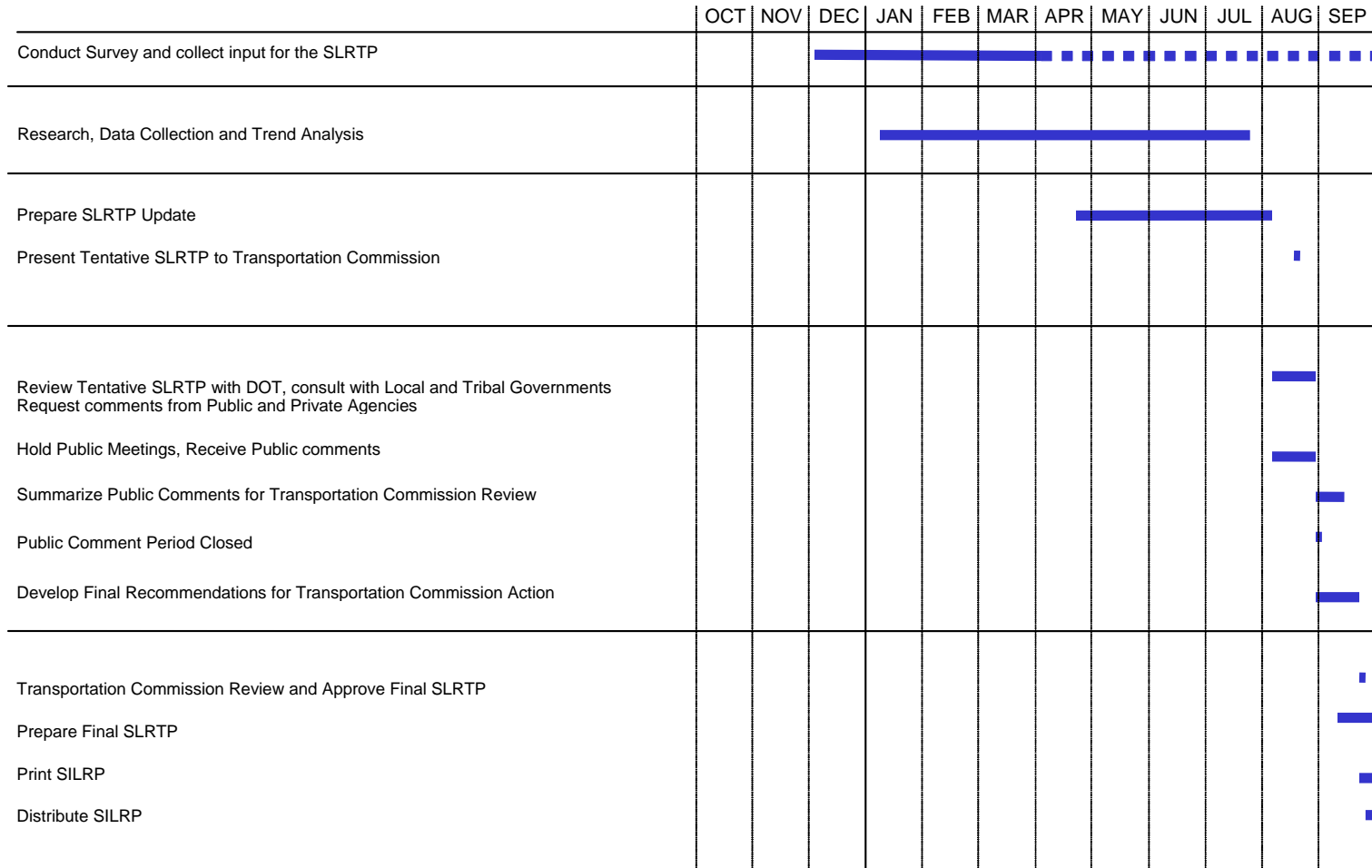
The Department is organized into four divisions, including Secretary, Finance and Management, Planning-Engineering, and Operations. The existing organization of the SDDOT promotes an intermodal approach to decision-making.

The decision-making process in SDDOT is a coordinated effort. Many different groups reviewed the Statewide Intermodal Long Range Plan before it was finally adopted. After the Division of Planning-Engineering developed the preliminary plan, the Executive Management Team reviewed it. The Executive Management Team is an advisory and decision-making body including the Secretary, the Division Directors, Region and Area Engineers. The plan was revised and reviewed by the general public and specific input groups. The Executive Management Team again reviewed and revised the plan, taking into consideration public input. The plan was then sent to the Transportation Commission for their review, comments, and approval. The Transportation Commission represents a cross-section of interests in the state and is the primary policy-making body for the SDDOT. Components of the Statewide Long Range Plan include studies of each mode and of intermodalism. This plan guides the development and updating of the various sub-elements into one cohesive decision-making system.

The management systems developed by SDDOT address pavement, bridges, and highway safety. These management systems will provide additional data, information, and analytical capability to achieve a more efficient transportation system. Output from the management systems must be integrated into the MPOs TIP and the STIP. The Statewide Long Range Plan will affect decisions as the TIPs and STIPs are developed.

Figure 1-6

Schedule for the Development of the Statewide Long Range Transportation Plan (SLRTP)



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During planning and decision-making, each member of the SDDOT must consider the future transportation challenges and opportunities outlined in this plan. Management and staff need to look at transportation systems as a whole, to use the intermodal information for analysis purposes, and to determine the most efficient and effective mode or intermodal solution to serve a particular transportation need.

Survey

In January 2010, the SDDOT released a survey asking the public questions about the transportation system. Seven hundred and twenty-eight people responded to the survey which was given online and by mail if requested.

Seventy-eight percent of the people who answered the survey said traveling in South Dakota is the same or better than as it was five years ago and eighty percent of the people are satisfied with the condition of the roads in South Dakota.

When asked on how to spend the transportation funding, preservation, maintenance and safety were the public's three highest priorities. The areas where funding asked were preservation and maintenance, safety, security, freight, rail, airports, transit, sidewalks, bicycle facilities and building new highways.

Another question asked was how big of a factor is transportation to the quality of life in South Dakota. Eighty percent of the people surveyed believe transportation is the most or an important factor to maintaining quality of life.

The survey results are consistent with the public input through the public involvement process.



Chapter 2: South Dakota's Transportation System

The State's transportation system accommodates multiple modes of transportation. This chapter will give you an overview of the existing transportation network, which includes highways, bridges, transit, rail, and bicycle and pedestrian accommodations.

This chapter will provide an inventory of the transportation system; explain the condition of the existing transportation system and the challenges the State faces to maintain the current system.

Highway System

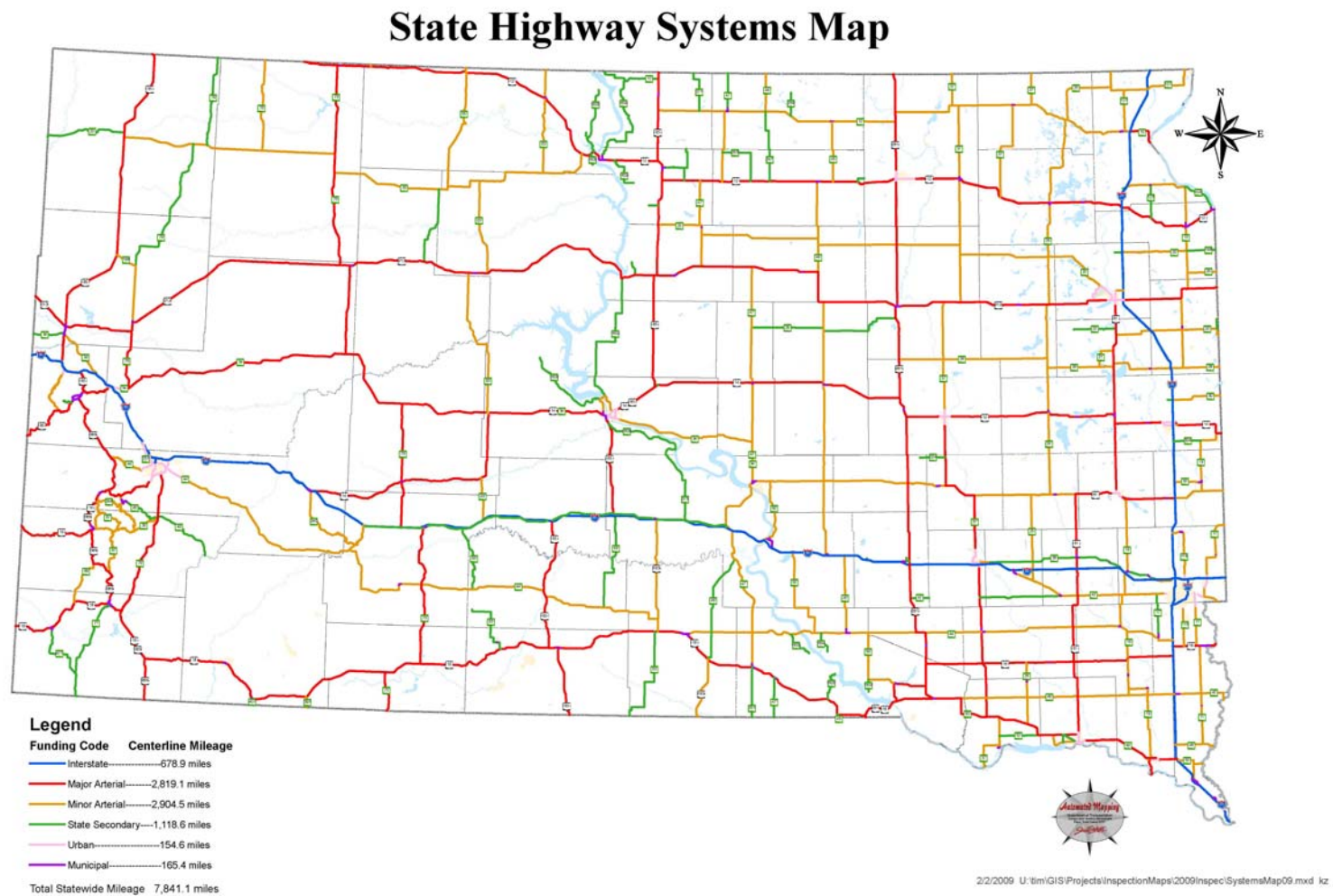
South Dakota has 84,228 miles of state, county and local roadways. The state generally has jurisdiction over the highways that move traffic longer distances and usually are between States, Counties, Townships, and Municipalities. Townships and Municipalities are responsible for the local road network, which serve shorter-distance trips. Counties are responsible for their trunk system that mainly serves medium-distance trips which connects the State Trunk Highway system with local roads.

System Facts

- ◇ State Highway System (Map 2-1)
 - 7,841 miles of interstate and state highways which handles 69 percent of vehicle miles traveled* (VMT)
 - The State has 9.3 percent of the total road network
 - The system includes 1,807 state owned structures (1,275 bridges/532 culverts)
 - Annual VMT on state and interstate highways was 5,875 million miles in 2008
- ◇ Local road network
 - 76,381 miles of country and municipal streets that handles 31 percent of the state's VMT
 - There are 4,004 structures (3,268 bridges/736 culverts) on country and municipal streets
 - Annual VMT on the local roads was 2,595 million miles traveled
- ◇ Annual VMT on all roads in South Dakota was 8.47 billion miles

* **Vehicle Miles Traveled** is defined as the number of miles traveled by an automobile in an area or over a stretch of roadway. One vehicle traveling the distance of one mile equals one VMT.

Map 2-1



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Challenges for the highway system and local road network

- ◇ Addressing safety issues
- ◇ Maintaining highway conditions at current levels
- ◇ Addressing mobility issues
- ◇ Addressing sensitive environmental issues
- ◇ Access management
- ◇ Addressing needs of an aging population
- ◇ Maintaining farm to market connectivity
- ◇ Enhance or maintain intermodal connectors to rail loading facilities, ethanol and pipeline terminals, air freight junctions, hospitals and major airports
- ◇ Securing adequate funding
- ◇ Responding to incidents and emergencies
- ◇ Addressing freight issues (new interchanges to accommodate facilities, increase in load weights and size)
- ◇ Addressing capacity issues
- ◇ Addressing wants vs. needs with limited funding

Airports

South Dakota's airport system is classified into seven categories. (Map 2-2)

- ◇ Air Carrier facilities accommodate all aircraft including commercial jet liners and military aircraft
- ◇ Category C – Large General Aviation airports does not currently serve commercial service but has the capabilities to serve larger aircraft
- ◇ Category B – Large General Aviation airports has capabilities to serve larger aircraft but doesn't serve commercial airlines
- ◇ Category B – Small General Aviation airports serve small aircraft used for business and charter flying, recreational and sport flying, training, and crop dusting
- ◇ Turf Landing Strip which do not meet FAA guidelines and are used for local purposes
- ◇ Private airport approved for public use.

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System Facts

- ◇ 72 public-use airports in South Dakota
- ◇ 57 airports qualify for federal funding
- ◇ Six airports provide commercial passenger service
- ◇ Aberdeen, Pierre Sioux Falls and Rapid City receive Federal Entitlement Funding
- ◇ Huron and Watertown receive Essential Air Service Funding
- ◇ Airports with freight terminals
 - Sioux Falls
 - Pierre
 - Rapid City
 - Watertown
 - Aberdeen
 - Huron
- ◇ Public airports with military hangers
 - Sioux Falls
 - Rapid City
 - Aberdeen
- ◇ Military facilities
 - Ellsworth Air Force Base (No Public Access)
- ◇ 2008 Statistics (Figure 2-1)
 - 688,849 total air passengers
 - Total air passenger increase of 18 percent from 1997



Map 2-2

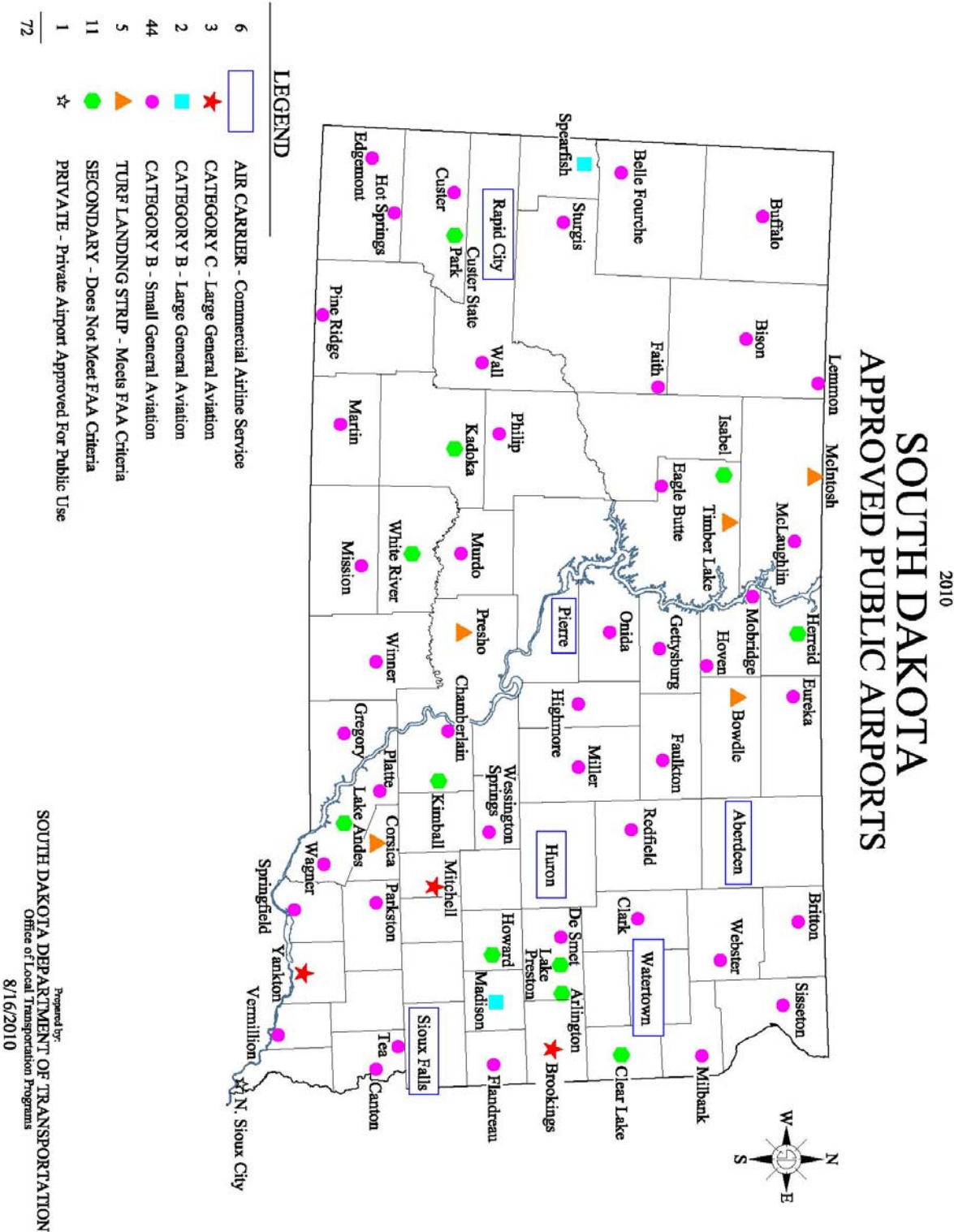
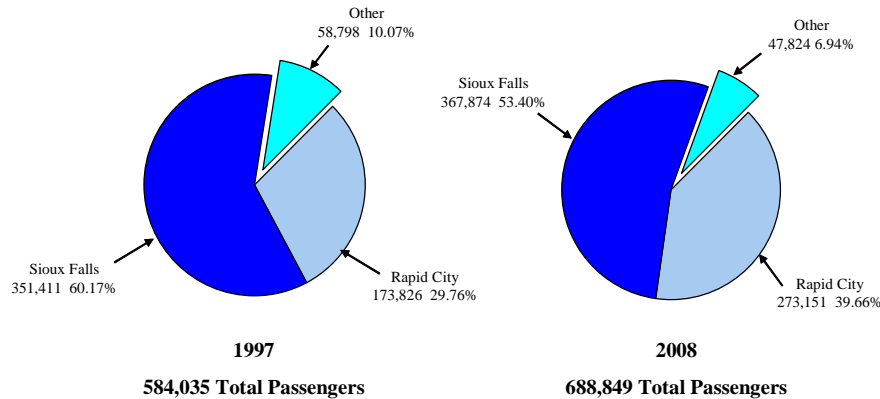


Figure 2-1

Outbound Airline Passengers



Source : SDDOT Division of Finance and Management 2009.

Aviation Challenges

- ◇ High tower obstructions
- ◇ Wildlife and public encroachments on airport properties
- ◇ Direct passenger service is very limited
- ◇ Funding sources are limited
- ◇ Incompatible land use around major airports and military facilities

Transit

South Dakota's transit system includes local bus, paratransit, and rural transit. The jurisdiction of these transit providers usually falls under local entities. The jurisdictions with transit service are required to fund the match for federal programs.

System Facts

- ◇ 22 rural transit providers and 2 urban transit providers in South Dakota Map 2-3
- ◇ In 2009 rural transit had 1.86 million rides and urban transit had 1.4 million rides

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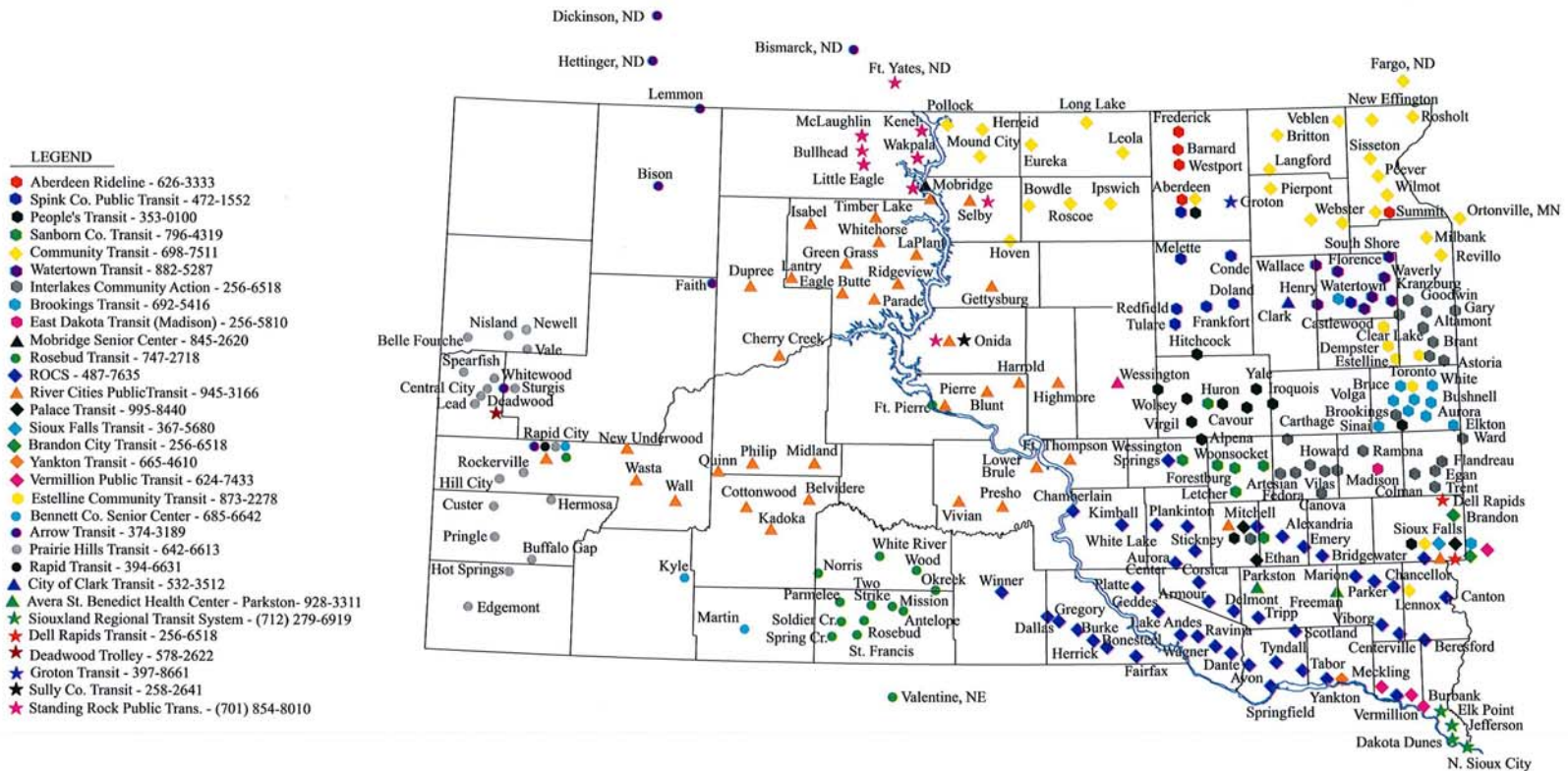
Transit Challenges

- ◇ Providing mobility to seniors, low-income households, and people with disabilities
- ◇ Dedicated local funding sources for transit
- ◇ Coordination between multiple transit providers servicing the same area
- ◇ Providing service to all areas of South Dakota



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COMMUNITIES SERVED BY SOUTH DAKOTA TRANSIT PROVIDERS



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Rail

The rail system in South Dakota provides transportation service to grain loading facilities, ethanol plants and some manufacturer and industrial users throughout the state. The rail system is publicly and privately owned to accommodate local and long distance freight needs.

Most of the states' rail lines are operating Class I railroads which provide higher volumes of freight along with longer hauling distances. A smaller percentage of the freight hauling is done by shortline operators that connect local grain elevators and freight facilities to the railroad network.

System Facts

- ◇ There is currently 1884 miles of rail lines operating in South Dakota. The state owns 371 miles of which it leases to regional authorities and the remainder is owned by eight railroad authorities
- ◇ South Dakota has 2,992 public and private railroad crossings
- ◇ There are eight railroad companies that operate in South Dakota (Map 2-4)
- ◇ 5.1 billion tons of freight were transported in South Dakota in 2009
- ◇ Box Elder has a truck-rail intermodal connection

Rail Challenges

- ◇ Preserving local rail service
- ◇ Improving rail condition on shortline track
- ◇ Addressing crossing safety and closures
- ◇ Funding for track upgrades and improvements on state owned lines

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Map 2-4

ETHANOL PLANTS & UNIT TRAIN LOADING FACILITIES - 2010

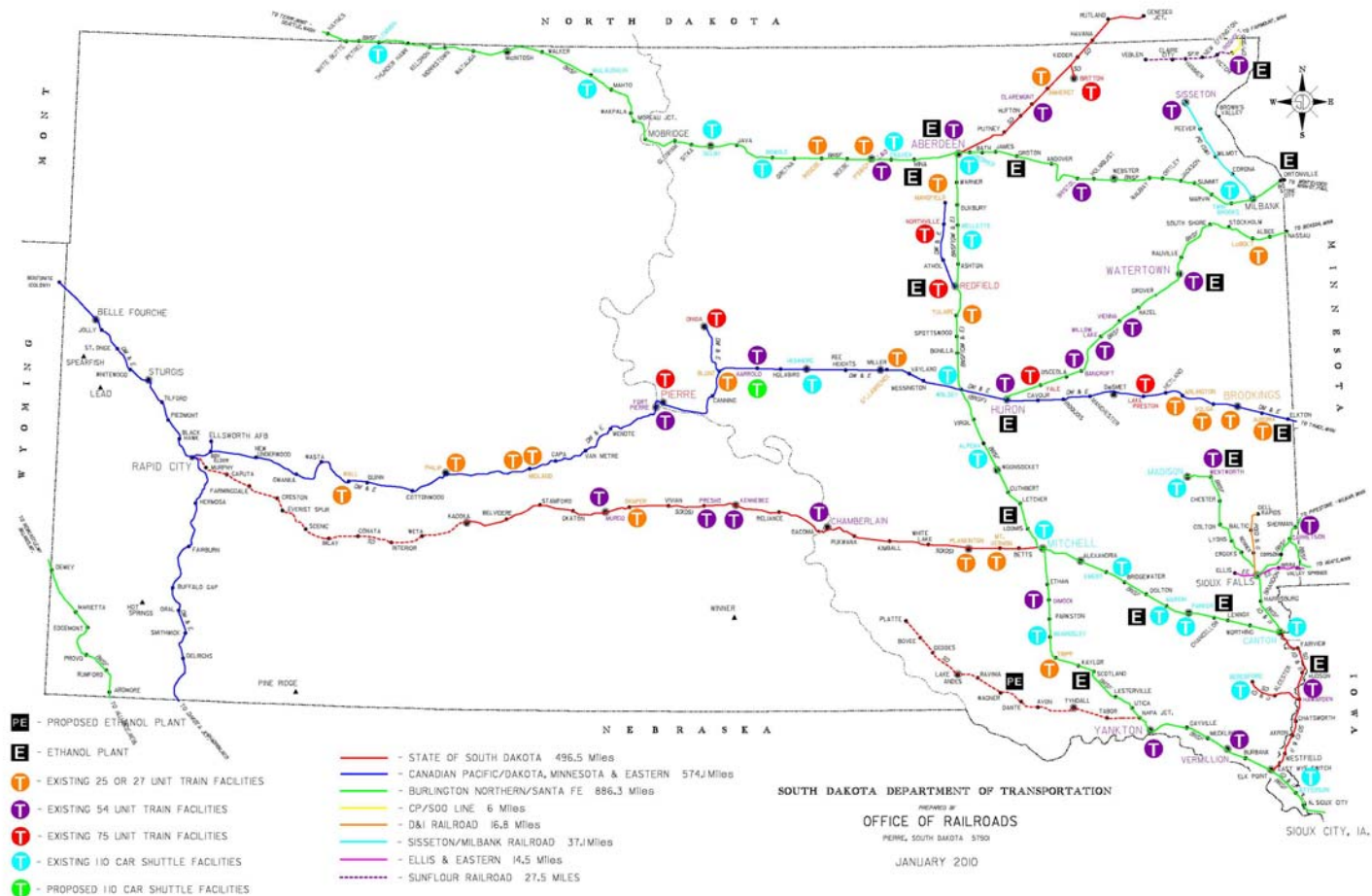




Photo by Aaron Packard

Bicycle

System Facts

- ◇ On average, 0.8 percent of the people in South Dakota bike to work on a daily basis¹
- ◇ Federal Highway Administration policy requires consideration of bicycle facilities on federally funded projects, where appropriate, in all highway construction and reconstruction projects
- ◇ Rural considerations include paved shoulders
- ◇ Urban considerations include bicycle lanes, bicycle paths, or increased width on outside driving lane to accommodate bicycle users

Bicycle Challenges

- ◇ Improving safety while increasing usage
- ◇ Funding
- ◇ Routinely considering bicycle facilities on all highway projects
- ◇ Rumble strips on rural highways

¹ 2000 Census Journey to Work Statistics

Chapter 2: South Dakota's Transportation System

- ◇ Rural roadway width and unpaved shoulders



Pedestrian

System Facts

- ◇ On average, 4.5 percent of the people in South Dakota walk to work on a daily basis²
- ◇ Federal Highway Administration policy requires consideration of pedestrian facilities on federally funded projects, where appropriate, in all highway construction and reconstruction projects
- ◇ Sidewalks provide pedestrians with access to transit facilities, schools, shopping and the workplace
- ◇ Urban considerations include sidewalks or shared use paths
- ◇ Rural considerations include shoulders

Pedestrian Challenges

- ◇ Improving safety while increasing usage
- ◇ Funding
- ◇ Improving connectivity between walkways and across highways
- ◇ Routinely considering pedestrian facilities on all highway projects
- ◇ Shorter distances between major traffic generators

² 2000 Census Journey to Work Statistics

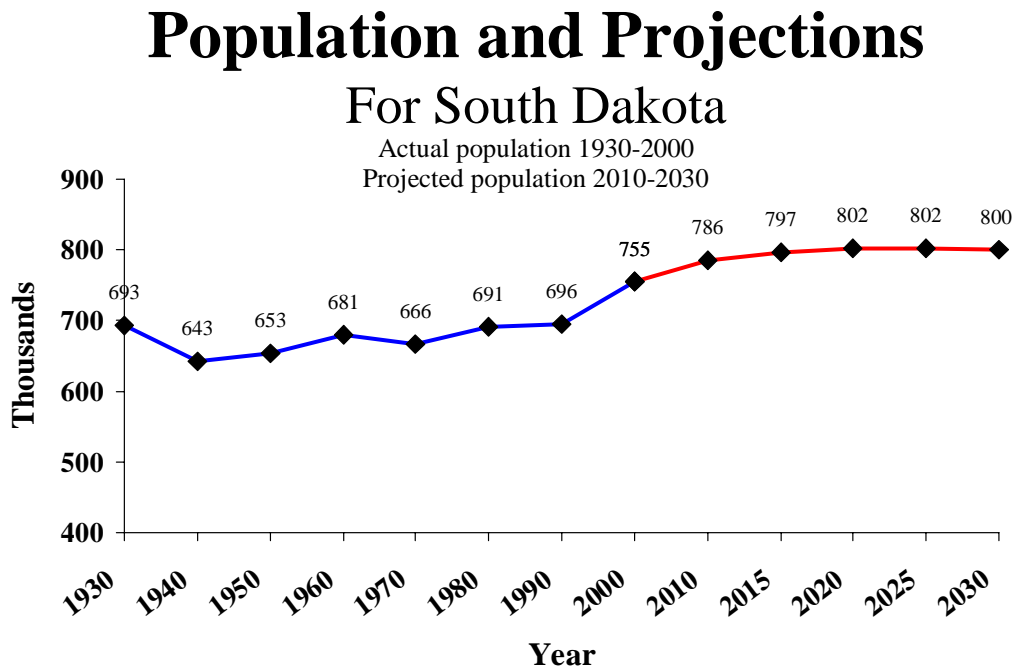
Chapter 3: Trends

There are several factors that affect the demand for transportation. Population, safety, travel patterns, economics, and environmental concerns are key issues that have a major influence on the demand for transportation. This chapter will analyze the trends associated with these issues.

Population

Historically, South Dakota's population has not increased like the national average. According to the U.S. Census, the population of South Dakota is projected to be 786,399 in 2010 compared to 754,844 in 2000. This is an increase of four percent compared to the 10 percent increase for the total United States population. The projections show an increase of two percent over the next 20 years. (See figure 3-1)¹

Figure 3-1



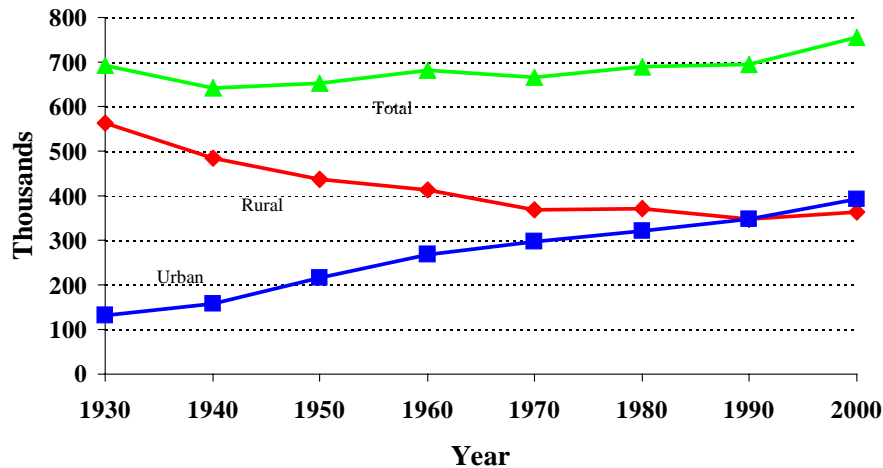
Source: U.S. Census Bureau

South Dakota is seeing a population shift from the rural communities to the urban communities. For the first time in South Dakota history, the urban population is greater than the rural population. This is a concern for South Dakota because the rural counties, which make up the majority land area of the state, are declining in population and only a few counties are increasing in population. (See figure 3-2)

¹ U.S. Census Bureau, Projections, <http://www.census.gov/population/projections/SummaryTabB1.pdf>

Figure 3-2

Urban and Rural Population 1930 to 2000



Rural: Includes the non-farm and farm population in areas of less than 2,500 people.
Urban: Includes the population in communities of 2,500 people or more.

Source: U.S. Census Bureau

The greatest population growth is occurring in Lincoln, Minnehaha, and Pennington counties. Portions of Minnehaha and Lincoln counties are part of the Sioux Falls MPO area and a portion of Pennington County is part of the Rapid City MPO area. Sioux Falls and Rapid City are the two largest cities in South Dakota respectively and people from the rural communities are relocating to urbanized areas like Sioux Falls and Rapid City.

U.S. Census statistical projections show since 2000, the population of Lincoln County has increased 66 percent, or approximately 16,000 people. The population in Minnehaha County has increased 21 percent, or approximately 31,000 people. Pennington County has increased 11 percent, or approximately 11,000 people. South Dakota's population increase over the same time period was 6.5 percent, or approximately 50,000 people.² The combined population increase in these metropolitan counties is approximately 58,000, compared to an increase of 50,000 for the entire State. This confirms the trend of rural people migrating to urban areas.

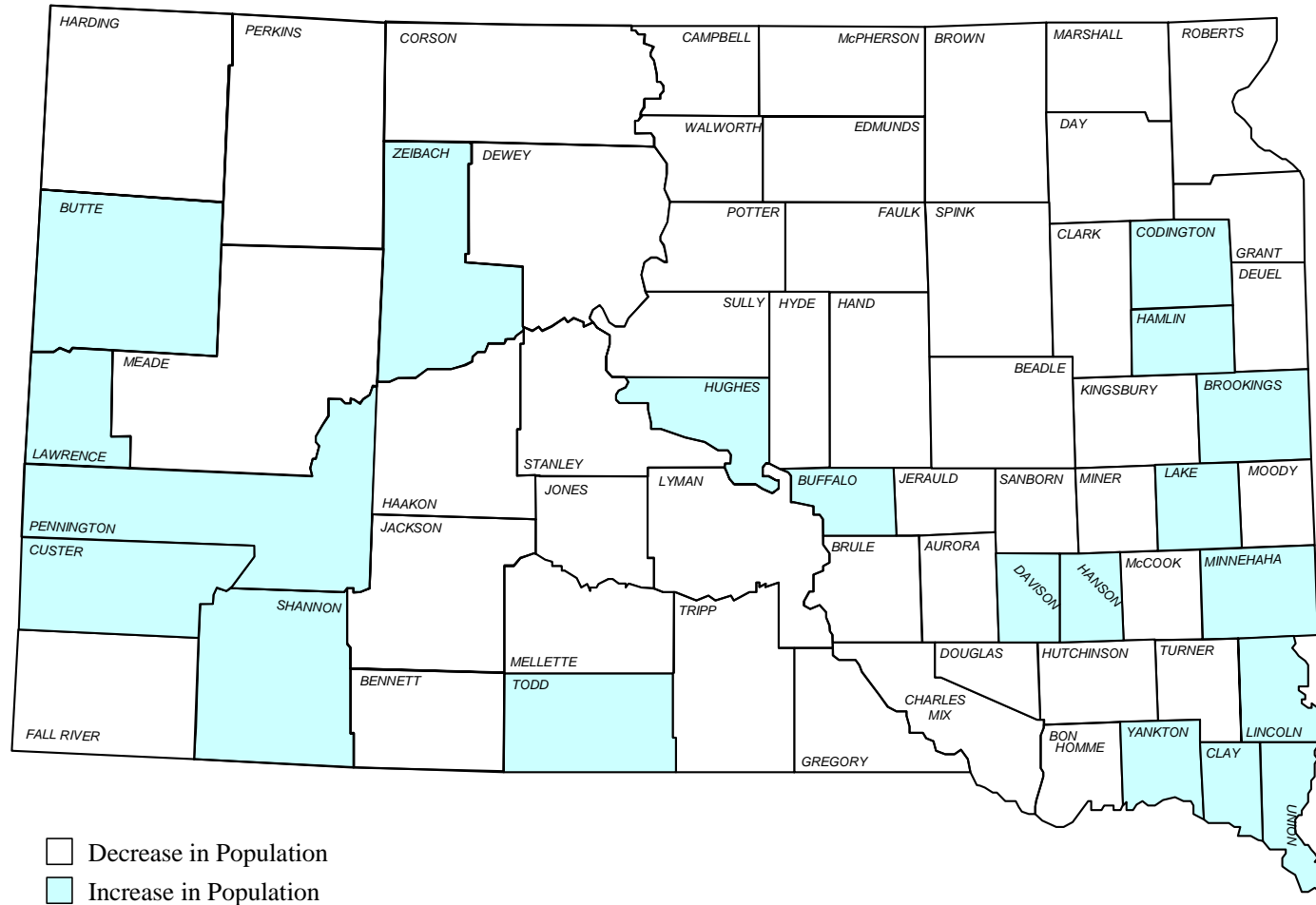
South Dakota has 66 counties and since 2000, 20 had a population increase and 46 had a population decrease. Map 3-1 highlights the counties that have increased in population. Most counties on the Interstate 29 corridor in eastern South Dakota show an increase in population along with the counties that engulf the majestic Black Hills in western South Dakota. This is consistent with the decline in rural population and increase in urban population as most of these counties have the larger cities or are neighboring counties to the metropolitan areas.

² U.S. Census, Population estimates, <http://www.census.gov/popest/counties/tables/CO-EST2009-01-46.xls>

Map 3-1

Population Change by County

2000 to 2008



□ Decrease in Population
■ Increase in Population

Source: US Census Bureau

Chapter 3: Trends

The age demographics of South Dakota will change significantly during the next 20 years which is consistent with the national trend. Table 3-1 summarizes the total percent change in population by age group. The population for South Dakota is projected to increase six percent, the age group under 45 is expected to decrease drastically and the over 45 age group increase. The national trend is consistent with the population trends for the people over 45 but the decrease for those under is a concern for the state. By the year 2030, 29 percent of the people driving will be 65 years or older. In contrast the 16-64 age group will see a seven percent decrease in drivers during the same period.

Table3-1: South Dakota's Population Summary

Category					Percent change 2000- 2030
	2000	2010	2020	2030	
Total Population	754,844	786,399	801,939	800,462	6.0%
Age 24 and Under	280,283	266,760	262,137	262,148	-6.5%
Ages 25 to 44	206,399	195,937	193,525	170,173	-17.6%
Ages 45 to 64	160,031	209,243	197,879	183,077	14.4%
Ages 65 and older	108,131	114,459	148,398	185,064	71.1%
Median Age	35.6	37.5	39.6	41.5	

Source: US Census Bureau³

Transportation Safety

Transportation safety is, and always will be an essential part of the South Dakota Department of Transportation's mission. The SDDOT is committed to improving transportation safety for the transportation system. The number of fatalities per mile of travel on our highway system steadily decreased from the early 70's to the mid 80's when it leveled off, but has recently fallen near the national average over the last few years (See Figure 3-3). South Dakota's fatality rate has historically been above the national average but initiatives developed through the Strategic Highway Safety Plan aims to combat an increase in fatalities.

Safe Accountable, Flexible and Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU) implemented new requirements to address the safety challenges.

◇ Roadway Safety Improvement Program

³ U.S. Census Bureau, Projections, <http://www.census.gov/population/projections/SummaryTabB1.pdf>

Chapter 3: Trends

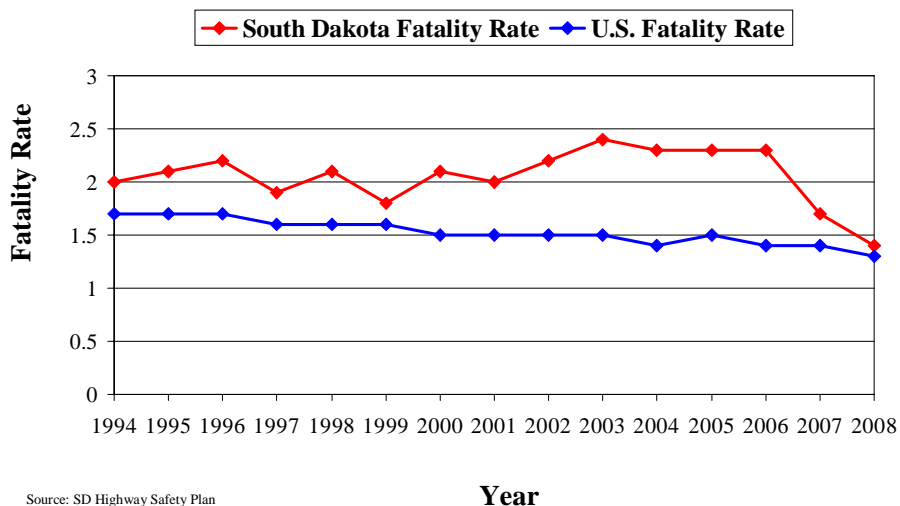
- ◇ Strategic Highway Safety Plan
- ◇ Targeted safety programs for construction work zones, older drivers and pedestrians

The SDDOT has implemented Safe Travel USA and 511 to offer the traveling public current road conditions and closure information. This technology does have an impact on transportation safety as do other technologies. The SDDOT has cameras and detection equipment located at various locations on Interstate and state highways. The public can view the cameras from their computer which allows them to see actual conditions.

Figure 3-3

Fatality Rate

Number of Fatalities per 100 Million Vehicle Miles Traveled
1994 - 2008

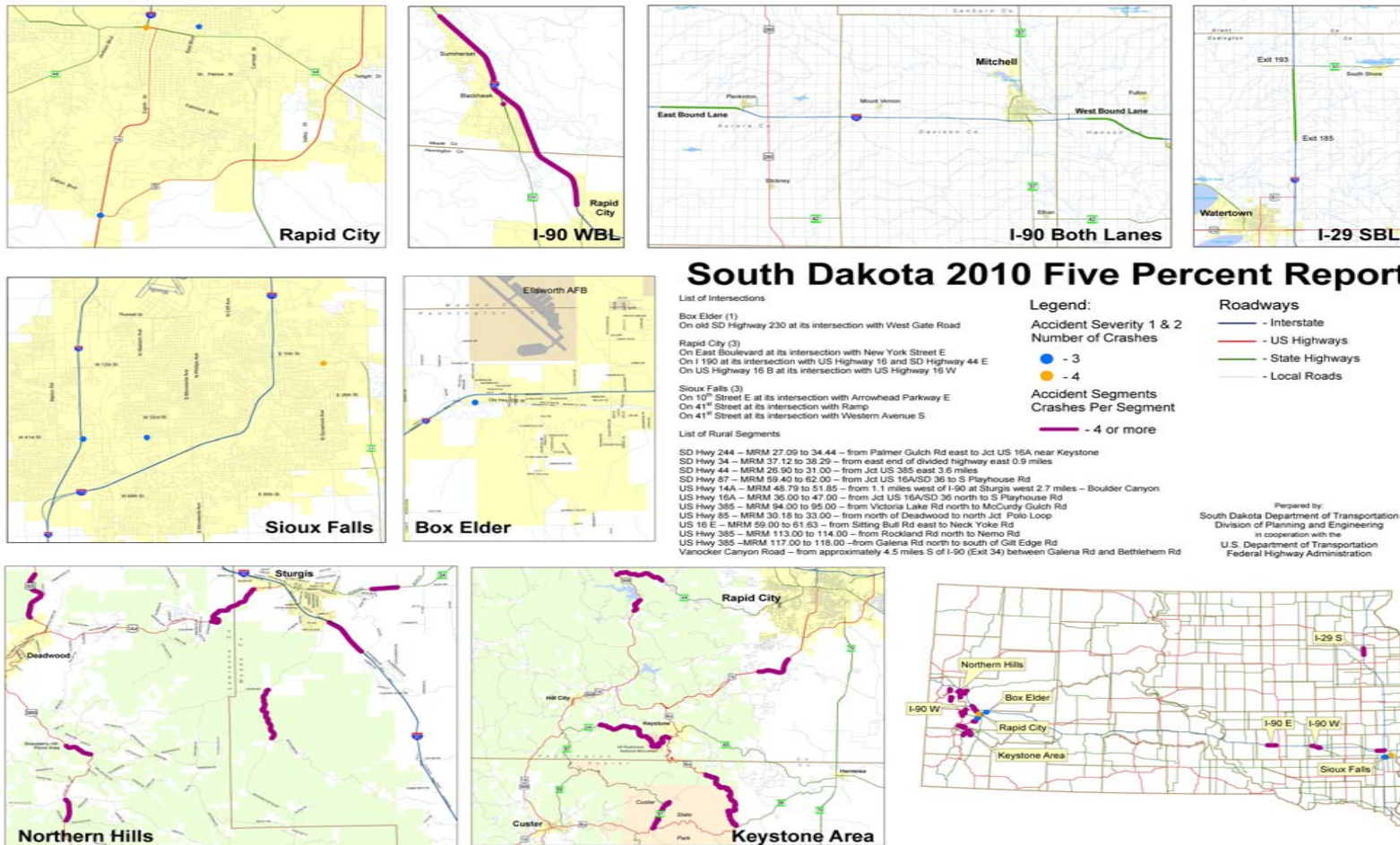


Below are some other factors that have attributed to an increase in roadway safety and decrease in highway fatalities.

- ◇ Increased seatbelt usage
- ◇ Airbags
- ◇ Awareness of drinking and driving has increased through public education
- ◇ Increased enforcement efforts with sobriety checkpoints, saturations and 24/7 program
- ◇ Increased rumble strip miles
- ◇ Shoulder widening on major highway reconstruction projects

Chapter 3: Trends

Map 3-2



Chapter 3: Trends

Map 3-2 shows the South Dakota 2010 five percent crash report. The map identifies locations where the top five percent of crashes occurred. The majority of the locations are in the Black Hills region of the state where the roadways are narrower, have decreased shoulders and more curves. The terrain is severe and environmentally sensitive which makes it challenging when designing a roadway.

The Strategic Highway Safety Plan is the guiding document for safety in the Statewide Long Range Transportation Plan. A summary of the plan goals are to reduce fatalities and crashes by five percent annually. The core values strategies to accomplish the goals are:

- ◇ **Education**--Driver education is used to establish behaviors that keep people safe on our highways. Educational strategies also aim at changing behaviors that contribute to crashes, such as drunk driving, speeding, lack of safety restraint usage and inattentive driving. Educational efforts also can make good drivers better at using anti-lock brakes and other safety technologies.
- ◇ **Enforcement**--Enforcement of traffic laws boosts compliance. Greater compliance with seat belt laws, laws against drinking and driving, and speed limits will reduce fatalities, injuries, and crashes.
- ◇ **Engineering**--Road design affects driver behavior and the severity of crashes. Modification of the roadway can be a solution in some crash-prone locations. Increasing the number of Road Safety Audits on key projects also could have benefits.
- ◇ **Emergency Services**--The difference between a fatal crash and an injury crash can be the length of time it takes to transport victims to appropriate medical care and the quality of care victims receive in transit.

Aviation Safety

Much of what the Aeronautics Commission and the Office of Aeronautics does is in the interest of aviation safety. Through the airport improvement program, projects are funded each year for the construction of safer runways, the upgrading of runways, the painting and marking of runways and taxiways, fencing to keep wildlife off runways, installation of automated weather reporting equipment, runway and taxiway lighting, the purchase of snow removal equipment, and many other projects to keep our airports as safe as possible. Please see chapter six for more information about future funding for the airport improvement program.

All public approved airports are inspected annually in South Dakota. The inspections focus on safety, pavement condition, lighting, and identifying potential obstructions. Permits for tall structures are required in South Dakota. A proposed structure is reviewed for its potential to be a hazard to aircraft or hindrance to future airport development. These structures must be built in conformance with marking and lighting requirements.

Chapter 3: Trends

Airport directories are prepared for all public use airports in South Dakota. These directories provide useful information needed by pilots landing at public use airports.

Security

South Dakota's vision for security is to be able to contribute to the coordination efforts and respond to any incident whether caused by human or natural events. The State of South Dakota has an Emergency Management Handbook, authored by the South Dakota Office of Emergency Management, provides an overview of emergency management in South Dakota. The handbook also provides the current major issues within emergency management.

The South Dakota Office of Emergency Management (SDOEM) is charged with the overall mission of protecting South Dakota's citizens and their property from the effects of natural, manmade, and technological disasters. To fulfill this mission, the SDOEM recognizes and utilizes the four phases of emergency management:

- ◇ **Preparedness:** Actions taken in advance of an emergency/disaster to develop operational capabilities and facilitate response operations. Such measures may include the development of plans, procedures, warning and communications systems, mutual aid agreements, and emergency public information.
- ◇ **Response:** Actions taken during or after an emergency/disaster to save lives, minimize damages, and enhance recovery operations. These measures include activation of emergency operation centers, plans, emergency communications system, public warning, mass care, shelter, search and rescue, and security measures.
- ◇ **Recovery:** Actions taken over the short or long term to return vital life support systems to minimum standards or to return life to normal or improved levels. Such measures include damage assessment, supplemental assistance, economic impact studies, and mitigation of damages sustained.
- ◇ **Mitigation:** Actions that can be taken to eliminate or reduce the degree of long term risk. Such measures include building codes, public education, hazard vulnerability analysis, and zoning laws and resolutions.⁴

The SDDOT supports emergency management and the State Emergency Operations Center (SEOC) when activated in the event of an emergency. SEOC manages major and minor incidents and are activated by the Governor and Management team depending on the severity. They work to minimize the situation until the emergency can be managed at a local level.

The SDDOT also commits personnel and equipment during large scale incidents in an attempt to control and resolve the situation. The target is to maintain or minimize effects to the transportation system during an emergency situation.

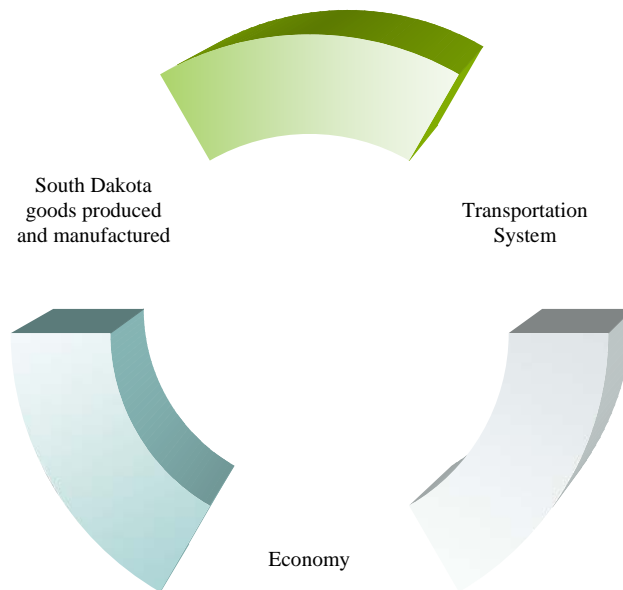
⁴ South Dakota Emergency Management Handbook: South Dakota Office of Emergency Management

Economics

South Dakota is a rural, agricultural state which relies heavily on the transportation system to transport agricultural goods from farm to market. Transportation and the state's economy are directly related. Economic growth that increases fuel consumption plays a vital role in funding the state's transportation system. The transportation network is the driving force serving economic production. This interrelationship allows the transportation system to function and the economy to grow (See Figure 3-4).

Figure 3-4

Transportation and the Economy



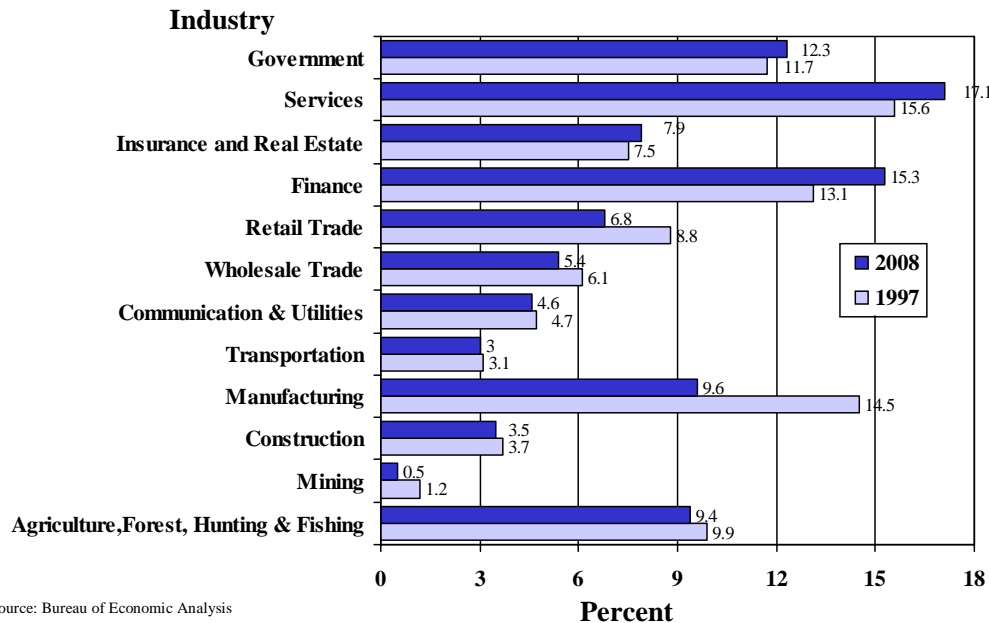
South Dakota's economy is based on finance, manufacturing, services, government and agriculture. Services and finance account for a high percentage of the state's gross state product (GSP) and is the backbone of the state's economy (Figure 3-5). Agricultural product producers in South Dakota rely heavily on the transportation system to move product to market. An efficient and well maintained transportation network is a priority to keep the economy strong.

Figure 3-5

South Dakota Gross State Product

Percent of Gross State Product by Industry

1997 compared to 2008

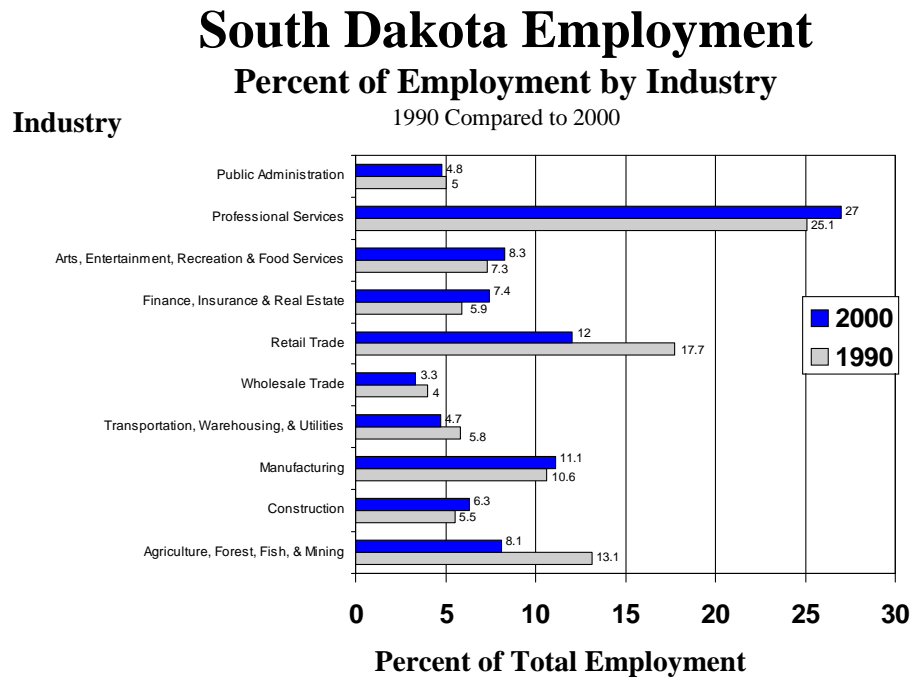


The economic condition of South Dakota stays relatively stable and is not as prone to the ups and downs on the national market. It does follow the pattern of the national economy but at a much lesser rate so the change is not as drastic as the national economy.

South Dakota is seeing a shift in the employment as the people are moving from rural to urban settings. The professional trade makes up almost 30 percent of the labor force. Manufacturing has had a slight increase in the labor force and holds at 11 percent. Agriculture has seen a decrease in the total labor force and is now 8 percent of the total.

The future labor force will be impacted by the aging population. The age of the people over 65 is projected to increase 71 percent while the other categories are projected to decrease. Is the aging population going to continue working or do they have enough in a retirement account to have a comfortable retirement without being part of the labor force? The answer to this question will have an impact on the transportation system and the economy.

Figure 3-6



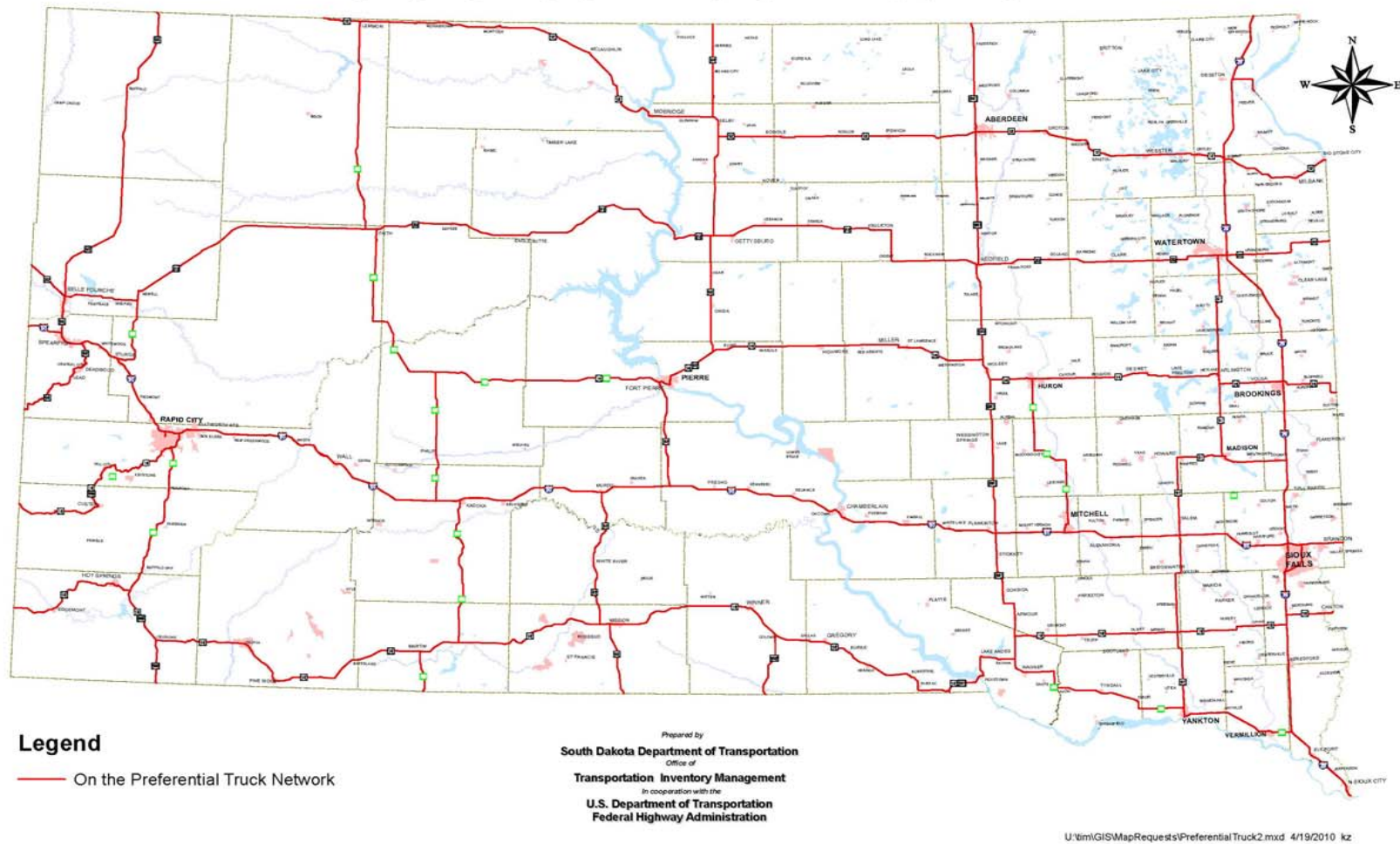
Source: United States Census of Population and Housing, 1980, 1990, 2000

South Dakota's transportation system allows businesses to ship goods within the state, from state to state, and to international markets. Map 3-3 shows the preferred truck network for South Dakota which identifies the best routes for freight haulers to use. The main east/west freight corridor is Interstate 90 and the main north/south freight corridor is Interstate 29.



Map 3-3

Preferential Truck Network



Chapter 3: Trends

South Dakota relies heavily on the roadway network to move freight from within its borders and from state to state. Table 3-2 shows, in 2002, 92 percent of the freight shipments within the state were moved by over-the-road freight haulers and only one percent by train. It is projected that in 2035 freight shipments will double by weight and trucking will still account for 87 percent of the shipments within the state.

South Dakota still relies on the trucking industry to move 39 percent of the freight out of the state and rail shipping accounts for 23 percent. The rail system is a vital resource to move freight to markets outside South Dakota and will continue in the future.

Table 3-2: South Dakota's shipments by Weight, 2002 and 2035 (Millions of Tons)

Mode	Within State			From State			To State		
	Year		%	Year		%	Year		%
	2002	2035	Change	2002	2035	Change	2002	2035	Change
Truck	54.4	104.1	91%	19.0	57.2	201%	11.4	25.6	125%
Rail	0.9	1.4	55%	11.2	13.4	20%	2.2	4.0	82%
Water	<0.1	<0.1	0%	<0.1	<0.1	0%	<0.1	<0.1	0%
Air, air & truck	<0.1	<0.1	0%	<0.1	<0.1	0%	<0.1	<0.1	0%
Truck & Rail	<0.1	<0.1	0%	<0.1	<0.1	0%	<0.1	<0.1	0%
Other Intermodal	<0.1	<0.1	0%	0.2	0.4	100%	<0.1	0.3	200%
Pipeline & unknown	3.9	14.2	264%	18.0	56.7	215%	18.5	22.6	22%
Total	59.2	119.9	103%	48.5	127.8	164%	32.2	52.5	63%

Source: Office of Freight Management and Operations

Table 3-3: South Dakota's shipments by Value, 2002 and 2035 (Millions of Dollars)

Mode	Within State			From State			To State		
	Year		%	Year		%	Year		%
	2002	2035	Change	2002	2035	Change	2002	2035	Change
Truck	\$16,046.1	\$36,393.6	127%	\$12,711.3	\$39,337.1	209%	\$10,526.9	\$26,856.0	155%
Rail	\$39.8	\$78.9	98%	\$1,566.1	\$2,554.4	63%	\$259.1	\$347.8	34%
Water	<0.1	<0.1	0%	<0.1	<0.1	0%	<0.1	<0.1	0%
Air, air & truck	\$2.7	\$5.3	96%	\$1,096.4	\$1,257.9	15%	\$239.2	\$2,647.2	1007%
Truck & Rail	\$29.3	\$49.6	69%	\$60.5	\$332.4	449%	\$31.8	\$106.1	234%
Other Intermodal	\$364.1	\$1,268.5	248%	\$2,738.4	\$5,507.9	101%	\$1,969.2	\$7,939.3	303%
Pipeline & unknown	\$780.9	\$4,388.2	462%	\$9,632.1	\$25,298.7	163%	\$6,155.8	\$8,138.1	32%
Total	\$17,263.0	\$42,184.3	144%	\$27,804.8	\$74,388.5	168%	\$19,182.0	\$46,034.5	140%

Source: Office of Freight Management and Operations

South Dakota trading partners are shown in table 3-4. The main trading partners are the bordering states of Minnesota, North Dakota and Iowa. The table shows that trade is

Chapter 3: Trends

projected to increase 124 percent by 2035. Trade to Minnesota is expected to almost triple over that period of time which will account for approximately 50 percent of the trading with the state of South Dakota.

Table 3-4: South Dakota's Top Trading Partners, 2002 and 2035

Mode	Tons (Millions)			Mode	Value (Millions of Dollars)		
	Year				Year		
	2002	2035	% Change		2002	2035	% Change
Foreign	2.4	3.5	46%	Foreign	\$1,199	\$4,120	344%
MN	28.3	81.5	188%	MN	\$10,992	\$33,862	308%
ND	20.0	30.9	55%	ND	\$6,675	\$11,861	178%
IA	8.1	15.0	85%	IA	\$3,584	\$8,260	230%
Total	80.7	180.4	124%	Total	\$46,987	\$120,423	256%

Source: Office of Freight Management and Operations

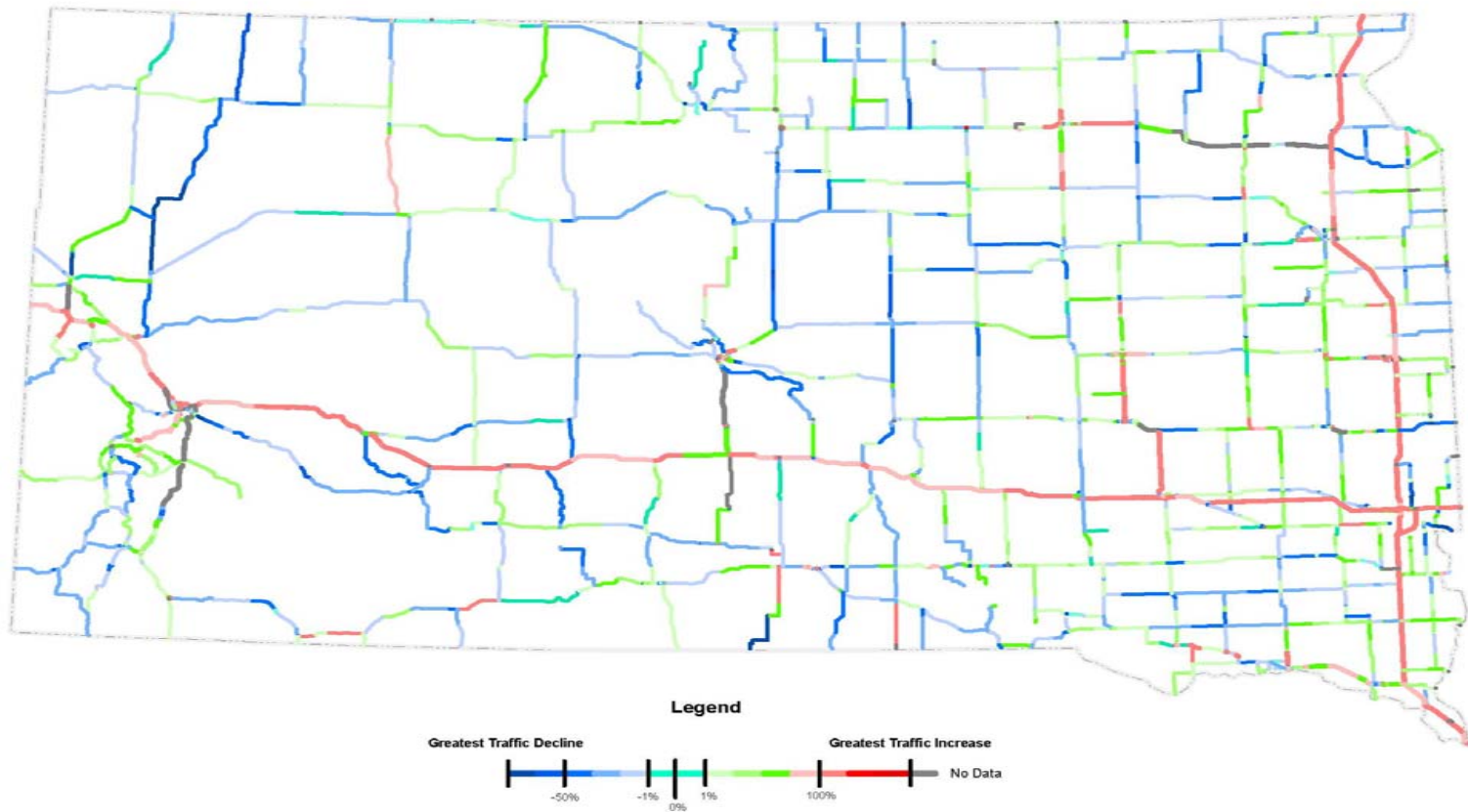
Regional Travel Patterns

Travel patterns are changing in South Dakota. The change is consistent with the population movement from rural to urban communities. In Map 3-3, the corridors that have seen the greatest increase in traffic are the Interstate 90 and Interstate 29 corridors. These facilities move traffic within the state and through the state. The Interstate system generates a significant amount of freight traffic moving goods to regional and global destinations.

The highway network east of the Missouri River is showing an increase in traffic on most roadways and west of the river is showing a decrease. The main reason for the difference is population densities east of the Missouri River are greater than the west with the east having more cities greater than 5,000 people. The Black Hills are located in the western part and rely heavily on tourism traffic to maintain a steady economy. The traffic patterns show an increase in the Black Hills with tourism increasing every year and it is projected the trend will continue.

It is projected the trend will continue with the rural areas decreasing in travel and the urban areas increasing. We project there will be a population shift from rural to urban over the next 20 years which will increase the traffic in the urban areas. The SDDOT will continue to monitor the traffic patterns to determine the needs and adjust the system.

ADT Percent Change 2003 vs 2009



Map 3-4

Environment

The environment is very important to the people of South Dakota and the SDDOT is dedicated to continue to find a balance between transportation and the environment. The SDDOT coordinates and consults with resource agencies, local stakeholders, and Tribal officials on environmental issues not only at a project level but early in the planning stages. Some of the key environmental concerns that are addressed in the process are:

- ◇ Wetland mitigation
- ◇ Threatened and Endangered Species
- ◇ Air quality
- ◇ Climate change
- ◇ Historic preservation
- ◇ Tribal Consultation

Wetland Mitigation

South Dakota is a rural state which provides habitat to many species of animals that rely on wetlands to survive. Wetlands are also crucial to flood control. Protecting our wetlands is important in maintaining the quality of life that is valuable to the people of South Dakota.

The SDDOT monitors the impacts to wetlands early in the planning process and continues until the project is complete. It is a continuous process and is in place to ensure wetlands are preserved for future generations.

The SDDOT consults with the resource agencies to determine the impact the project will have on wetlands. The resource agencies evaluate the impacts and make a determination on what is required to mitigate the wetlands being impacted. The mitigation varies depending on the quality of the wetland, severity of impact and area of the state in which the wetland is impacted. Some of the mitigation is done on the project site, some away from the project site, and some may be purchased from a wetlands mitigation bank at another location.

Threatened and Endangered Species

Protecting threatened and endangered species is very important to the SDDOT. The SDDOT follows the National Environmental Policy Act (NEPA) process and consults with the US Fish and Wildlife Service and the SD Game, Fish and Parks Department in regard to the threatened and endangered species. South Dakota has twenty-nine Federal and State threatened (T) or endangered (E) species. Table 3-4 identifies the threatened and endangered species:

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Table 3-4: Threatened and Endangered Species in South Dakota

Threatened		Endangered	
Piping Plover	False Map Turtle	Finescale Dace	Banded Killfish
Bald Eagle	American Dipper	Gray Wolf	Eskimo Curlew
Osprey	Longnose Sucker	Pallid Sturgeon	Whooping Crane
River Otter	Northern Redbelly Dace	Lined Snake	American Burying Beetle
Swift Fox	Eastern Hognose Snake	Sicklefin Chub	Blacknose Shiner
Pearl Dace	Sturgeon Chub	Topeka Shiner	Least Tern
Western Prairie Fringed Orchid		Scaleshell Mussel	Black-Footed Ferret
		Peregrine Falcon	Higgins Eye Pearlymussel

The SDDOT will evaluate and consult with the US Fish and Wildlife Service and the SD Game Fish and Parks Department on the impacts at a project level during the NEPA process and also through the STIP process.

Air Quality

Air quality is very important to the quality of life in South Dakota. Air pollutants are emitted into the air by vehicles, farm equipment and other transportation related sources. Pollutants can cause health problems, damage to crops and plants, and in severe cases decrease visibility.

South Dakota Department of Environment and Natural Resources continuously monitors ambient air quality in various locations of the state. South Dakota has no counties that are designated as non attainment for ozone, nitrogen dioxide, sulfur dioxide and particle matter.

Nationwide there is a growing concern about greenhouse gasses and South Dakota will continue to monitor the effects transportation in South Dakota has on air quality.

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Climate Change

The burning of fossil fuels and the resulting greenhouse gas emissions, particularly carbon dioxide (CO₂) but also methane and nitrous oxide, trap heat in the earth's atmosphere and are the largest contributors to human causes of climate change. CO₂ emissions resulting from transportation sources account for one third of the carbon dioxide emissions.⁵ South Dakota's carbon footprint ranks 48th in the United States which indicates the small impact South Dakota has in contributing to global warming. South Dakota ranks 44th for the use of hybrid vehicles.⁶ Nationally there is a push to use hybrid vehicles and it is slowly reaching South Dakota.

At the international level, national and state levels, efforts to assess the effects of, and solutions to, climate change are becoming high priorities. Nationally, the U.S. Congress is addressing climate change through several proposed bills.⁷

In 2007, Twelve Midwestern states signed the 2007 Energy Security and Climate Stewardship Platform for the Midwest, an agreement aimed at reducing dependency on petroleum-based energy sources, particularly foreign oil. South Dakota is one of the leaders in producing and promoting ethanol usage which will decrease dependency on foreign oil and aid in decreasing our country's carbon footprint.

At the local level, as of 2007, 720 cities across the United States, including 2 from South Dakota, signed the U.S. Conference of Mayors Climate Protection Agreement to meet the Kyoto protocol's greenhouse gas emission reduction targets.³

South Dakota will continue to promote uses of alternative fuels and hybrid vehicles to decrease greenhouse gas emissions.

Historic Preservation

Preserving significant historical areas in South Dakota is a goal for the SDDOT. South Dakota is rich with history and the SDDOT is committed not to disturb historical sites so they remain for future generations. Consultation with the State Historical Society is done at all levels of the process and will continue. The mission of the S.D. State Archaeological Research Center is to explore, preserve, and exhibit the archaeological record of South Dakota's human story for present and future generations. The SDDOT shares the same philosophy as it relates to transportation issues and is dedicated to meet the mission of the Archaeological Research Center.

Tribal Consultation

South Dakota works closely with South Dakota's nine tribal governments on the planning and environmental process. Each year, SDDOT representatives travel to consult with tribal representatives on the statewide transportation improvement program (STIP). The

⁵ Wisconsin's Connections 2030 Long Range Multimodal Transportation Plan

⁶ eRedux.com

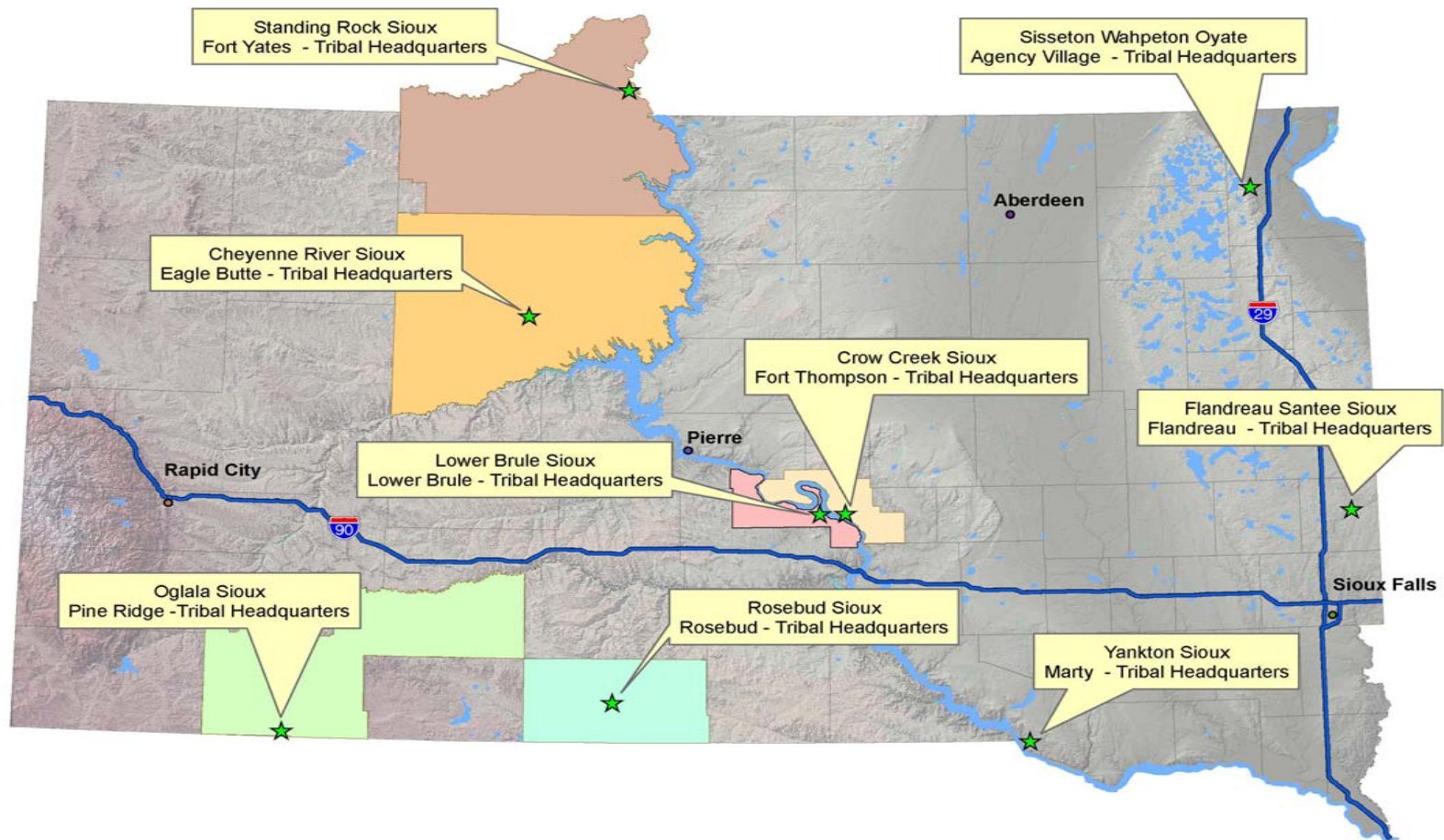
⁷ Wisconsin's Connections 2030 Long Range Multimodal Transportation Plan

Chapter 3: Trends

SDDOT presents the projected five year project specific plan to get their input and concerns as it relates to historic preservation, environmental issues and coordination. The consultation is an exchange of information and is vital to keeping the projects on schedule. In addition, the tribes are invited for consultation at a tribal STIP meeting to receive project specific comment of projects programmed for the next five years.

Map 3-5

Indian Reservations, Trust Lands and Tribal Headquarters



Chapter 4: Maintenance and Preservation



South Dakota's mission is to provide a safe, efficient and effective transportation system and our vision states the SDDOT will work diligently to provide transportation facilities that meet the needs of the traveling public. The SDDOT will accomplish the mission and vision through cost effective strategies that maximize the investment in the transportation infrastructure.

Preserving and Maintaining South Dakota's Transportation System

South Dakota takes pride in maintaining high standards in the quality of the roadway system. Preservation and maintenance are vague terms and can have different meanings to different people. Federal Highway Administration has identified eight planning factors that need to be addressed throughout the entire planning process and one of the factors is to preserve and maintain the transportation system. Preservation, maintenance, and safety are the highest priorities for SDDOT.

Maintenance

Maintenance refers to the daily activities required to maintain and preserve a level of service that is satisfactory to the traveling public. Maintenance usually focuses on the

Chapter 4: Maintenance and Preservation

system parts such as striping, shoulders, patching potholes, bridge railings, guardrails, crack sealing, signage, traffic signals and transit vehicles.

Below are examples of maintenance activities:

- ◇ Patching potholes on roadways
- ◇ Concrete repair on highways
- ◇ Airport runway repair
- ◇ Repairing guardrail
- ◇ Culvert and bridge repairs
- ◇ Repairing roadways, bridges and culverts after a natural disaster or vandalism
- ◇ Maintaining traffic signals
- ◇ Maintaining roadway striping
- ◇ Bridge inspections
- ◇ Routine transit vehicle maintenance
- ◇ Repairing state owned rail facilities and railroad crossings
- ◇ Repairing facilities after crashes
- ◇ Snow removal
- ◇ Roadway shoulder sweeping
- ◇ Signage and delineation repair
- ◇ Mowing in Rights of Way

Maintenance is a reactive response to an immediate problem that has occurred on the transportation system but does not address the long term issues of a deteriorating infrastructure.

Preservation

Preservation refers to long term activities required to extend the life of the transportation system, transit services, airport facilities, and state owned rail facilities. The SDDOT uses a pavement management system and bridge management system to aid in determining cost-effective strategies to enhance the long term performance and safety of the entire transportation network. The SDDOT has set pavement surface index targets and minimum pavement rating targets for the state owned transportation system.

Federal Highway Administration (FHWA) Office of Asset Management provided the following guidance regarding pavement preservation definitions in a Memorandum dated September 12, 2005:

Pavement preservation represents a proactive approach in maintaining our existing highways. It enables State transportation agencies to reduce costly, time

Chapter 4: Maintenance and Preservation

consuming rehabilitation and reconstruction projects and the associated traffic disruptions. With timely preservation we can provide the traveling public with improved safety and mobility, reduced congestion, and smoother, longer lasting pavements. This is the true goal of pavement preservation, a goal in which the FHWA, through its partnership with the states, local agencies, industry organizations, and other interested stakeholders, is committed to achieve.

Below are examples of preservation activities:

- ◇ Resurfacing or reconstructing highways, local roads and airport facilities
- ◇ Reconstructing or rehabilitating bridges
- ◇ Addressing the American with Disabilities Act (ADA) Transition Plan priorities during reconstruction and resurfacing
- ◇ Providing Surface treatments for highways, bridges and airports

Pavement Management

The pavement management system is a tool that is vital to preserving a safe and efficient transportation network. The SDDOT does annual field inspections to gather pavement condition and distress data. The data is analyzed to identify treatment strategies based on current available funding, funding projections for the next 20 years and a benefit cost ratio. Optimized projects are balanced by the highest return per dollar invested, traffic volumes and some human input. The pavement management system provides a data driven decision making process without bias which makes it easier to justify the projects selected for treatment based on need.

South Dakota has identified pavement surface condition index targets and target minimums for the transportation network. The rating system is 0 to 5 with 5 being a perfect roadway and zero, a roadway that is very broken up and unacceptable.

Below are the state performance targets for the pavement surface condition index and the minimum target and pavement surface condition index measurement for the categories of highways.

- ◇ **Transportation Network**—Entire roadway system owned by the South Dakota Department of Transportation.
 - Target measurement—3.90
 - Minimum target measurement—3.55
 - 2010 pavement surface condition index measurement—4.31
- ◇ **Interstate Highways**—Interstate 29, 90, 229 and 190. Limited access roadways that move traffic from state to state with minimal interruption.
 - Target measurement—4.20
 - Minimum target measurement —3.90

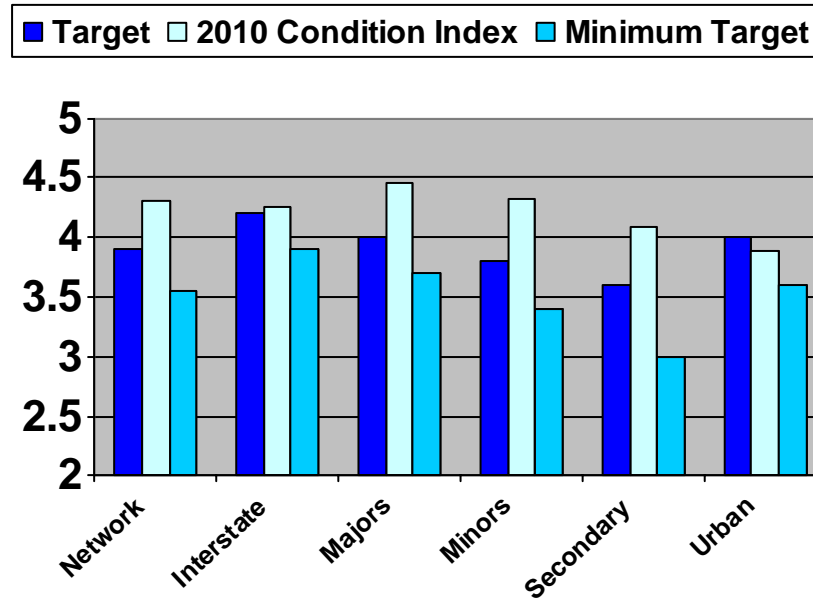
Chapter 4: Maintenance and Preservation

- 2010 pavement surface condition index measurement —4.26
- ◇ **Major Arterials**—Roadways that move traffic from state to state that connect the major trade centers and Class 1 Cities (> 5,000 population). Examples are US83, US281, US81, US85 and US14.
 - Target measurement—4.00
 - Minimum target measurement —3.70
 - 2010 pavement surface condition index measurement —4.46
- ◇ **Minor Arterials**—Roadways that move traffic within the state to the major arterials and interstate highways to fulfill statutory requirements. Examples are SD115, SD44, SD65, and SD10.
 - Target measurement—3.80
 - Minimum target measurement —3.40
 - 2010 pavement surface condition index measurement —4.32
- ◇ **State Secondary Roadways**—Other roadways under SDDOT jurisdiction.
 - Target measurement—3.60
 - Minimum target measurement —3.00
 - 2010 pavement surface condition index measurement —4.09
- ◇ **Urban and Municipal Roadways**—State highways that are predominately curb and gutter and go through cities and towns. Urban roadways are roadways in communities with a population greater than 5,000 and Municipal roadways are roadways in communities with a population greater than 450 but less than 5,000. Examples are US212 through Watertown, US12 through Aberdeen, US 14 through Pierre and US83 through Herreid.
 - Target measurement—4.00
 - Minimum target measurement —3.60
 - 2010 Urban pavement surface condition index measurement —3.82
 - 2010 Municipal pavement surface condition index measurement —3.95

Figure 4-1 depicts the current pavement condition of state highways for South Dakota. The network ratings are above the performance targets in all categories except for the urban and municipal roadways. These roadways are state highways that are in city limits and generally consist of curb and gutter. South Dakota is programming projects yearly to upgrade these facilities. These projects are usually stand alone projects because they require extensive coordination and planning with local entities and utility companies to get the project ready for construction. Some of the challenges are ADA, storm sewer drainage, existing utility conflicts, rights of way, and coordination with businesses. The items are challenging but can be overcome with extensive coordination efforts.

Figure 4-1

Condition of Roadways

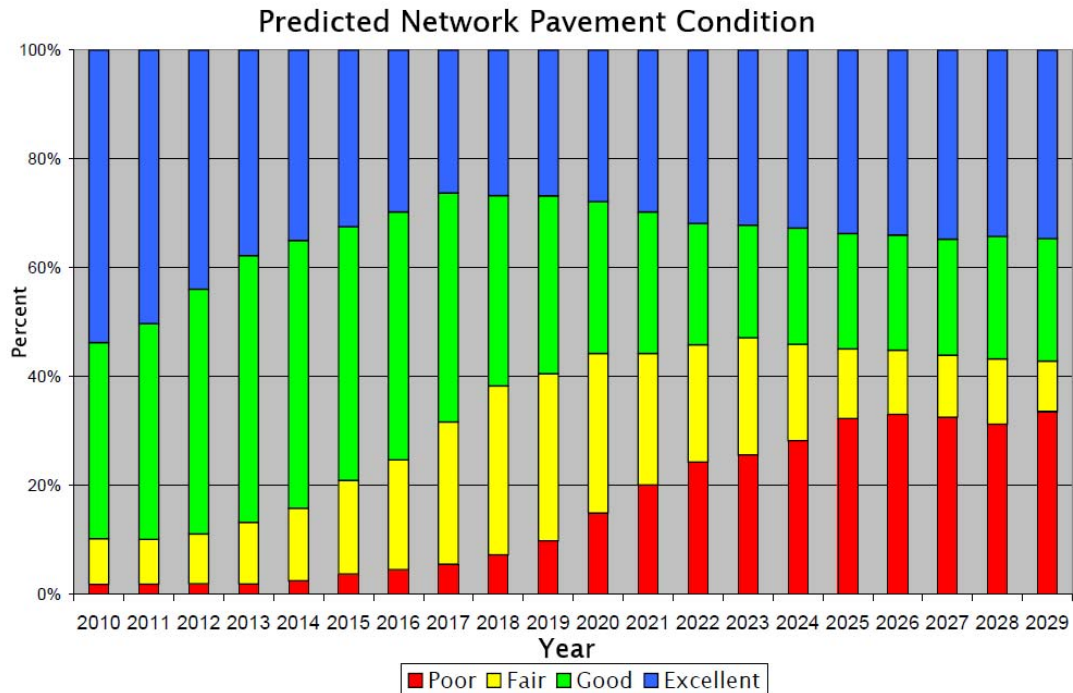


The short term pavement condition of the state highways currently is very good. This is attributed to the \$183 million received in 2009 from the American Recovery and Reinvestment Act of 2009. Figure 4-1 only shows current pavement condition. There are narrow highways, highways without shoulders, and other safety issues that need to be addressed. The funding challenges (see Chapter 6 Funding) that are foreseen show the performance levels decreasing over the life of the plan. This is a concern for the SDDOT and will be a challenge to maintain current conditions. The SDDOT has predicted the pavement performance condition for the next 20 years based on expected funding. Figure 4-2 shows the pavement condition in 2010 as 90 percent good to excellent and in 2029 we predict approximately 50 percent of the pavement will be considered in fair to poor condition.



Chapter 4: Maintenance and Preservation

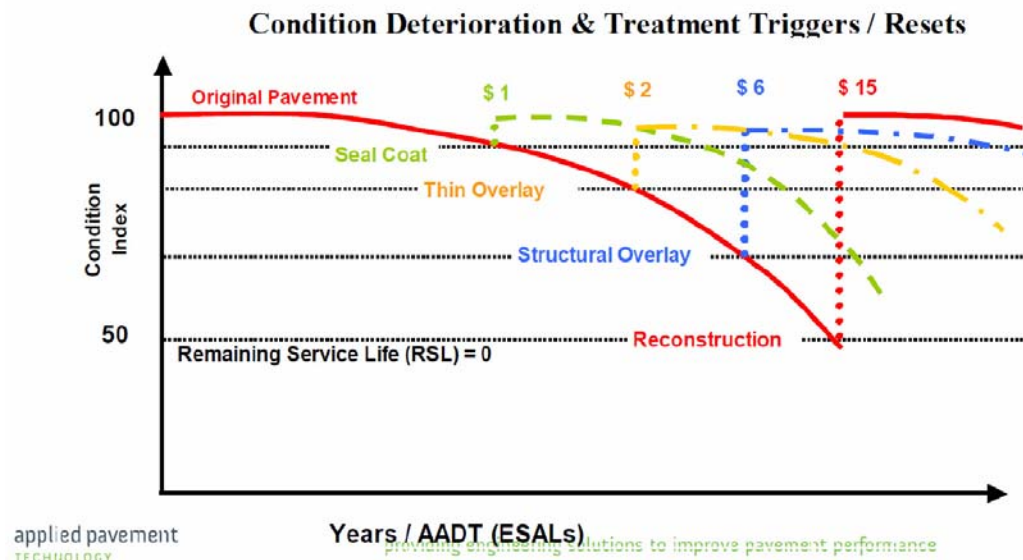
Figure 4-2



The costs associated with maintaining the different categories vary. Figure 4-3 shows the benefits of pavement management and cost comparisons associated with maintaining the transportation system. These are not actual costs but the relationship between the different types of preservation as it relates to deterioration to the roadway. By doing the right preservation treatments at the right time, the SDDOT maximizes funding to get the best return on the dollar.



Figure 4-3



Bridge Management

South Dakota also has a bridge management system that works similar to the pavement management system. State bridge inspectors inspect bridges on the state inventory every two years and major bridges crossing the Missouri River every year. The rating is based on condition indexes of various structure elements and element conditions. Structures and box culverts that are 20 feet wide or greater are on the state inventory and qualify for bridge funding.

The life span of a new bridge structure varies but will average about 75-100 years. Figure 4-4 shows the age of the bridges in the inventory. The majority of South Dakota's structures are between 35 and 60 years of age. The SDDOT realizes we cannot replace all of the structures at one time, so we are dedicating additional funding each year for replacement of aging structures.



Figure 4-4

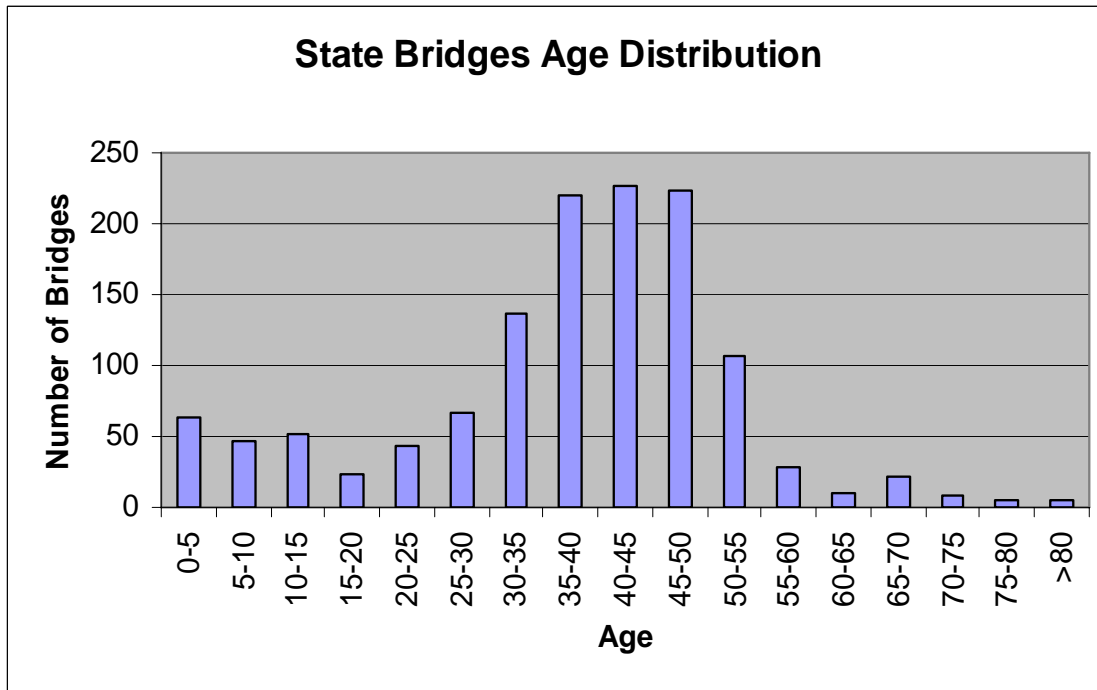
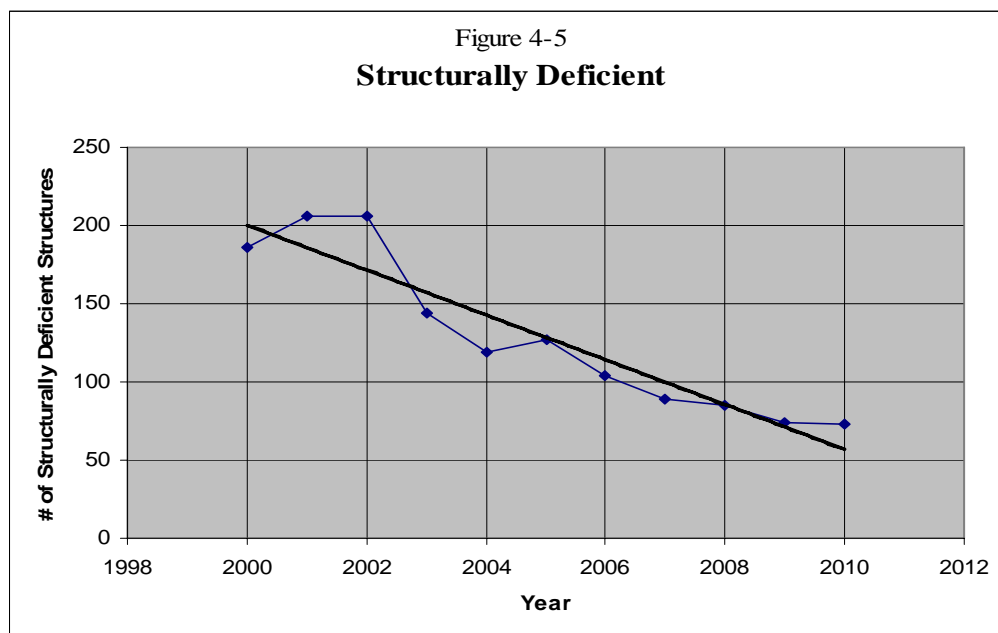


Figure 4-5 shows the number of structurally deficient structures in South Dakota since 2000. Over the past ten years, the number of structures rated structurally deficient has been decreasing. The department's emphasis on preservation is the reason for the decrease in structurally deficient structures. Our goal is to continue this process and keep the trend of decreasing the number structurally deficient structures.



Capacity

The SDDOT will evaluate highway capacity based on level of service. Level of service is defined in Table 4-1. The target level of service for any highway mainline on the state system is level of service C or better. The target level of service on interstate ramps is level of service D or better. If the level of service falls below the target levels, the SDDOT will evaluate the roadway to determine if there is an option to economically increase capacity to alleviate congestion.

Table 4-1: Level of Service	
Level of Service	Description
A	Free flow with low volumes and high speeds.
B	Reasonably free flow, but speeds beginning to be restricted by traffic conditions.
C	In stable flow zone, but most drivers are restricted in the freedom to select their own speeds.
D	Approaching unstable flow; drivers have little freedom to select their own speeds.
E	Unstable flow; may be short stoppages
F	Unacceptable congestion; stop-and-go; forced flow.

Source: Adapted from the AASHTO Green Book. ¹ 1995 Highway Capacity Manual (Special Report 209), Transportation Research Board, Washington, DC, Third Edition, updated 1994

Some of the measures to increase capacity are:

- ◇ Adding through lanes
- ◇ Adding turn lanes at intersections
- ◇ Limiting access
- ◇ Adding medians

Capacity projects will be required to compete with preservation and maintenance projects for inclusion in the Statewide Transportation Improvement Program five year plan. The SDDOT will look at the benefit cost of all the projects to determine how to use funding efficiently.

Challenges

South Dakota's highway network was developed over the last century using funding from both private and public entities. The transportation system consists of Interstate highways, U.S. highways, state highways, local roads, airports, railways, and transit services. The transportation system is very important to maintain the quality of life we have grown to expect.

The SDDOT is facing many challenges:

- ◇ Aging highway system
- ◇ Aging bridge structures
- ◇ Limited funding
- ◇ Increasing construction and operating costs

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- ◇ Growth in urban areas which increases requests for new highways, the need to address capacity issues, and provide more transit services
- ◇ Right of way costs associated with capacity projects
- ◇ Flooding and other natural disasters

Much of the interstate system was built in the 1950s and 1960s. The lifespan of concrete pavement can be up to 60 years. The SDDOT uses a 40 year lifespan for planning purposes. The SDDOT is in the process of replacing the aging interstate system with new concrete and, in some areas, repairing with asphalt concrete overlays to extend the life until reconstruction can take place. The overall condition of the highway network currently exceeds the targets set although projections show the pavement condition decreasing. If funding stays constant, it is projected that between 2019 and 2023, all of the highway categories will fall below the minimum pavement condition rating targets.

Financing South Dakota's transportation needs continues to be the greatest challenge. With the aging transportation system, maintenance and preservation tactics change. Costs have been increasing but revenues from the highway trust fund have not been keeping up with the cost to maintain the transportation system. This has been a major impact not only with the state system but also to the local government's ability to maintain and preserve their infrastructure. In many cases, locals have deferred preservation and maintenance activities due to lack of funding. When maintenance and preservation activities are not completed on the transportation system, deterioration accelerates and the cost of repair will increase. The project may require a full reconstruction earlier than expected and if preservation treatments were done, the life of the roadway would have been extended at a lesser cost.

Without funding increases to maintain and preserve the local network, local governments cannot keep pace with maintenance and preservation needs. The local governments may have to revert to gravel surfacing due to lack of available funds or a greater deterioration of local roadways will result.

Strategies

South Dakota is committed to maintaining and preserving the transportation system and has identified several important strategies to address the challenges:

- ◇ Use the pavement management system to determine the most cost effective measures to maintain or exceed the goals and minimums set for the transportation network
- ◇ Use the bridge management system to determine the most cost effective measures to maintain the bridge inventory
- ◇ Preserve South Dakota's state trunk highway system infrastructure
- ◇ Evaluate capacity issues if the mainline falls below level of service C or interstate ramps fall below level of service D

Chapter 4: Maintenance and Preservation

SDDOT Division of Operations has adopted pavement preservation guidelines to provide information regarding the use of pavement preservation strategies for maintaining pavement condition consistent with the pavement surface condition targets and target minimums set by the SDDOT. The department's policies and procedures regarding the use of pavement preservation techniques are also provided in the pavement preservation guidelines document. Pavement preservation is a cost-effective way of managing assets. The document defines various types of pavement preservation strategies to aid in determining the best application for each unique situation.

SDDOT will continue to use the pavement management and bridge management system to aid staff in identifying preservation needs of the state trunk system. This is an efficient tool which guides the SDDOT in the decision making process to meet the performance targets.

Chapter 5: Mobility and Transportation Choice

Providing mobility and transportation choice is a vital part of South Dakota's mission to provide a safe, efficient and effective transportation system. An effective transportation system provides multi-modal transportation facilities, which improves the quality of life and economic growth in our communities and State.

South Dakota's transportation system offers many options to provide mobility and transportation choice, including public transit (fixed route, rural, specialized, paratransit), bicycling, walking, and passenger air service.

The SDDOT works with county, local and federal governments, along with the private sector to provide a wide variety of mobility choices to the public. By working together, there is a better chance to increase transportation opportunities for people to travel. For example, a person may choose to take a bus, ride a bicycle, walk or a combination to get to work instead of traveling by motorized vehicle.



Photo by Aaron Packard

The Bicycle and Pedestrian Plan

This section constitutes the statewide bicycle and pedestrian plan of the Statewide Transportation Plan. Bicycling and walking are important means of transportation and it is the policy of the SDDOT to consider bicycle and pedestrian needs during the design process for any highway or bridge project and to make accommodations for these needs whenever it is feasible to do so. SDDOT will ensure that any transportation improvement along a corridor will not make bicycle or pedestrian access more difficult or impossible. The SDDOT will not eliminate any existing bicycle or pedestrian access on a state highway unless a reasonable alternative route is provided.

It is a goal of the SDDOT to improve bicycle and pedestrian usage and availability. It is also a goal to improve the accuracy and availability of accident data. Improved data

Chapter 5: Mobility and Transportation Choice

collection and analysis will allow the department to improve the analysis of bicycle and pedestrian needs and to determine the impact of proposed transportation projects on these transportation modes. Figure 5-1 shows the number of bicycle fatalities and injuries reported from 1997 to 2009.

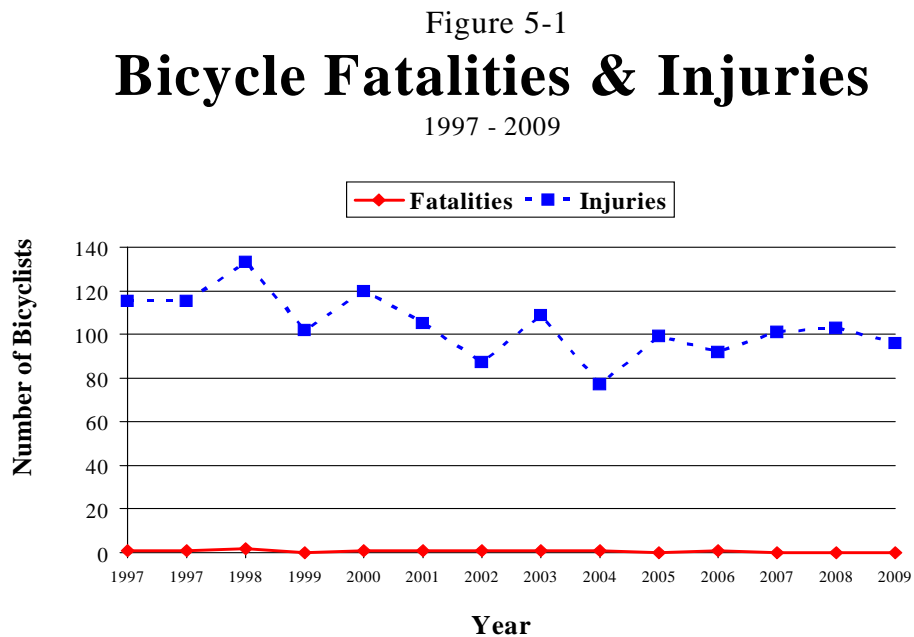
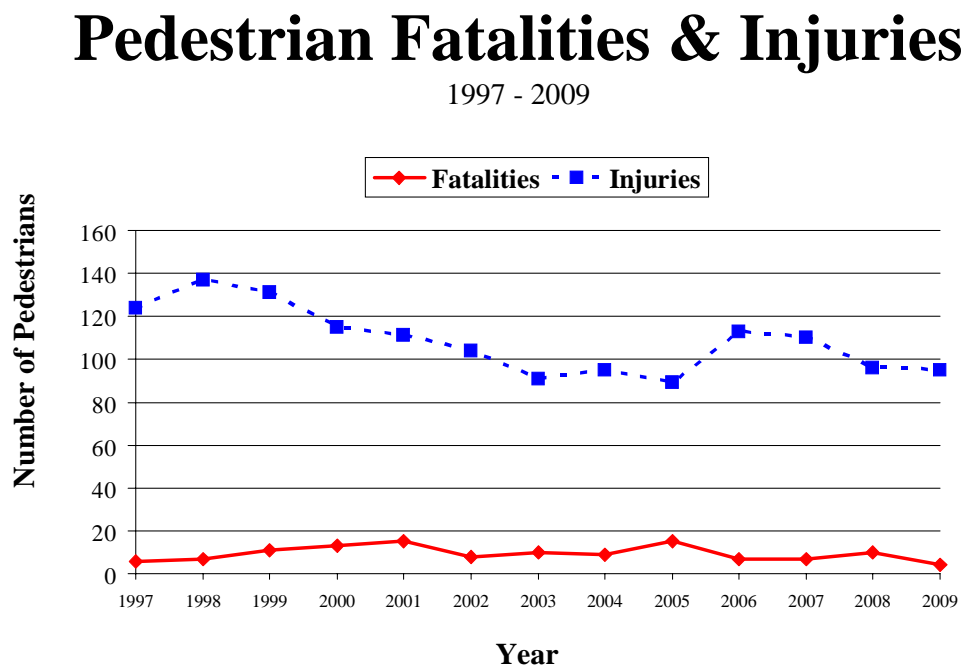


Photo by Aaron Packard

Figure 5-2 shows the number of pedestrian fatalities and injuries reported from 1997 to 2009.

Figure 5-2



Another goal of the department is to increase the participation of bicycle and pedestrian organizations in the planning process. It is important that all stakeholders, including bicyclists and pedestrians, participate in the development of the STIP and Statewide Long Range Transportation Plan.

SAFETEA-LU continued to provide flexibility to the States and MPOs to fund bicycle and pedestrian improvements. All of the major transportation funding programs can be used for bicycle and pedestrian-related projects. SAFETEA-LU encourages States and MPOs to include bicycle and pedestrian improvements as an integral part of larger projects and to review and use the most appropriate funding source for a particular project. To be eligible for the expanded funding, the bicycle facility must be for transportation rather than recreational purposes.

Surface Transportation Program, Bridge Program, and Hazard Elimination funds may be used for bicycle and pedestrian projects that are not located on the federal-aid highway system. Most federal-aid highway funding programs require a 20 percent State match of federal funds. There are, however, exceptions to the general 80/20 rule related to programs that fund bicycle and pedestrian projects, including:

- ◇ Safety set-aside projects are 90 percent Federal;

Chapter 5: Mobility and Transportation Choice

- ◇ Bicycle-related transit projects are 90 percent federal and may increase to 95 percent federal for bicycle-related transit enhancement projects.
- ◇ Federal Lands Highways projects are 100 percent Federal
- ◇ Individual Transportation Enhancement and Recreational Trails Program projects may exceed the 80 percent Federal share provided the State program overall matches at the 80/20 level.

The state and/or local funds used to match federal-aid highway projects may include donations of funds, materials, services, or right-of-way. Funds from other Federal programs (e.g. HUD block grants, Land and Water Conservation Fund (LWCF)) may also be used to match Transportation Enhancements, Scenic Byways, and Recreational Trails Program funds up to 100 percent.

Ten percent of the Surface Transportation Program funds provided to South Dakota fund enhancements and beautification of the transportation system. Enhancements include historical sites, environmental landscaping, bicycle routes, and trails. Since the inception of the Transportation Enhancements Program, the number of bicycle and pedestrian facilities has expanded. A total of \$16,937,083 of transportation enhancement funds has been invested to build or improve bicycle and pedestrian facilities. This is a substantial amount of funds, but other federal and state highway funds have been used to enhance the state highway system for bicycle and pedestrian use.

To increase connectivity, bicycle, and pedestrian walkway projects are coordinated with other intermodal planning components including the state trunk highway system. Except where specifically prohibited, bicycles may be ridden on any highway in South Dakota on the right hand shoulder with the flow of traffic including along the Interstate.

The Department of Game, Fish, and Parks funds many projects through the Land and Water Conservation Fund (LWCF) which began in 1965. The funds can be used to develop outdoor recreation plans, and to construct hiking and bicycling trails. Under this federal program, LWCF matches 50 percent of the cost of developing these projects. The amount of funds provided by the Federal government for these projects varies from year to year.

Another possibility for trails is to convert abandoned railroad right-of-ways into bicycle and pedestrian trails if there is sufficient public support. The state has built one of the longest bicycle trails in the country using this approach in the Black Hills called the George S. Mickelson Trail. The GF&P is spearheading efforts in the Rails to Trails Program and the SDDOT has provided funds through the Enhancement Program.

Chapter 5: Mobility and Transportation Choice



Transit

Transit provides another option for people to get from one place to another. With the population aging, reliability on transit is expected to increase. A function of the State of South Dakota's transportation system is to provide convenient and affordable access to jobs, health care facilities, educational facilities, and grocery and shopping facilities. South Dakota is a rural state with low population densities and minimal services. Many people in South Dakota have no choice but to travel by automobile because there are no other alternatives.

Challenges

There are many challenges associated with providing transit services throughout the state. The SDDOT is committed to provide as many options for the citizens as possible with the limited resources available. Below are some of the biggest challenges for transit.

- ◇ Increasing operating costs
- ◇ Overcoming limited funding
- ◇ Providing rural public transit
- ◇ Coordinating between different agencies providing services

Chapter 5: Mobility and Transportation Choice

◇ Meeting transit needs for the aging population

These challenges are difficult to overcome because most can not be controlled. The population is aging and South Dakota has limited health care facilities in rural areas. Transit services are located in communities throughout the state with limited service to communities under 1000 population. Many transportation dependant people in these small communities rely upon family members, neighbors and friends for transportation. Transit agencies and the SDDOT are working with smaller communities to provide mobility for all the citizens of South Dakota.

Coordination between different agencies has improved with SAFETEA-LU because of the adoption of coordinated human services plans in the MPO communities and South Dakota's statewide plan. Coordination between public and private agencies offering the same services is getting better as a result of plan implementation.

Opportunities

South Dakota's population density limits the amount of transit services that can be provided. In rural areas transit opportunities are limited, but the state will support efforts to enhance transportation and mobility choices. Some of the mobility and choice opportunities we can support are:

- ◇ Use federal funding that maximizes transit opportunities
- ◇ Support public, specialized and human services transit
- ◇ Support development of fixed transit services in urban areas
- ◇ Support rural transit throughout South Dakota

Use Federal Funding to Maximize Transit Opportunities

There are several federal funding sources to enhance transit opportunities. South Dakota maximizes the opportunities by using the following programs from www.fta.dot.gov:

Metropolitan and Statewide Planning (5303, 5304)

These programs provide funding to support cooperative, continuous, and comprehensive planning for making transportation investment decisions in metropolitan areas and statewide.

Urbanized Area Formula Program (5307)

The Urbanized Area Formula Funding program makes federal resources available to urbanized areas and to Governors for transit capital and operating assistance in urbanized areas and also for transportation related planning. An urbanized area is an incorporated area with a population of 50,000 or more that is designated as such by the U.S. Department of Commerce, Bureau of the Census.

Chapter 5: Mobility and Transportation Choice

Eligible activities include:

- Planning, engineering, design, and evaluation of transit projects and other technical transportation related studies
- Capital investments in bus and bus related activities
 - replacement of buses
 - overhauling of buses
 - rebuilding of buses
 - crime prevention and security equipment
 - construction of maintenance and passenger facilities
- Capital investments in new and existing fixed guideway systems
 - rolling stock
 - overhauling and rebuilding of vehicles, track, signals, communications, and computer hardware and software.

All preventive maintenance and some Americans with Disabilities Act complementary paratransit service costs are considered capital costs.

For urbanized areas with populations less than 200,000, operating assistance is an eligible expense. In these areas, at least one percent of the funding apportioned to each area must be used for transit enhancement activities such as historic preservation, landscaping, public art, pedestrian access, bicycle access, and enhanced access for persons with disabilities.

Bus and Bus Facilities (5309)

The transit capital investment program provides capital assistance for three primary activities:

- New and replacement buses and facilities (Bus and Bus Related Equipment and Facilities program).
- Modernization of existing rail systems (Fixed Guideway Modernization program).

The Bus and Bus Related Equipment and Facilities program (Bus program) provides capital assistance for new and replacement buses, related equipment, and facilities. It is a discretionary program to supplement formula funding in both urbanized and rural areas.

Eligible capital projects include the purchasing of buses for fleet and service expansion, bus maintenance and administrative facilities, transfer facilities, bus malls, transportation

Chapter 5: Mobility and Transportation Choice

centers, intermodal terminals, park-and-ride stations, acquisition of replacement vehicles, bus rebuilds, bus preventive maintenance, passenger amenities such as passenger shelters and bus stop signs, accessory and miscellaneous equipment such as mobile radio units, supervisory vehicles, fare boxes, computers and shop and garage equipment.

Transportation for Elderly Person and Persons with Disabilities (5310)

This program provides formula funding to states for the purpose of assisting private nonprofit groups in meeting the transportation needs of the elderly and persons with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Funds are apportioned based on each state's share of population for these groups of people.

Funds are obligated based on the annual program of projects included in a statewide grant application. The State agency ensures that local applicants and project activities are eligible and in compliance with federal requirements, that private not-for-profit transportation providers have an opportunity to participate as feasible, and that the program provides for coordination of federally assisted transportation services aided by other federal sources. Once the Federal Transit Administration (FTA) approves the application, funds are available for South Dakota to administer to its program and for allocation to individual subrecipients within the state.

Eligible items are capital expenses that support transportation to meet the special needs of older adults and persons with disabilities.

Formula Grants for Other than Urbanized Areas (5311)

The Formula Grants for Other than Urbanized Areas is a rural program that is formula based and provides funding to states for the purpose of supporting public transportation in rural areas with population of less than 50,000. The goal of the program is to provide the following services to communities with population less than 50,000:

- Enhance the access of people in nonurbanized areas to health care, shopping, education, employment, public services, and recreation;
- Assist in the maintenance, development, improvement, and use of public transportation systems in nonurbanized areas;
- Encourage and facilitate the most efficient use of all transportation funds used to provide passenger transportation in nonurbanized areas through the coordination of programs and services;
- Assist in the development and support of intercity bus transportation; and
- Provide for the participation of private transportation providers in nonurbanized transportation.

Eligible recipients may use the funding for capital, operating, and administrative expenses for public transportation projects that meet the needs of rural communities.

Chapter 5: Mobility and Transportation Choice

Examples of eligible activities include: capital projects; operating costs of equipment and facilities for use in public transportation; and the acquisition of public transportation services, including service agreements with private providers of public transportation services.

The state must use 15 percent of its annual apportionment to support intercity bus service, unless the Governor certifies, after consultation with affected intercity bus providers, that the needs of the state are adequately met.

Rural Transit Assistance Program (5311B)

States may use Rural Transit Assistance Program (RTAP) funds to support nonurbanized transit activities in four categories: training, technical assistance, research, and related support services.

The State develops RTAP activities through a process that provides maximum opportunity for the participation of rural transit operators, both public and private, in identifying and establishing priority areas of need for transportation research, technical assistance, training, and related support services in other than urbanized areas.

Job Access and Reverse Commute Program (5316)

The Job Access and Reverse Commute (JARC) program was established to address the unique transportation challenges faced by welfare recipients and low-income persons seeking to obtain and maintain employment. Many new entry-level jobs are located in suburban areas, and low-income individuals have difficulty accessing these jobs from their inner city, urban, or rural neighborhoods. In addition, many entry level-jobs require working late at night or on weekends when conventional transit services are either reduced or non-existent. Finally, many employment related-trips are complex and involve multiple destinations including reaching childcare facilities or other services.

New Freedom Program (5317)

The New Freedom formula grant program aims to provide additional tools to overcome existing barriers facing Americans with disabilities seeking integration into the work force and full participation in society. Lack of adequate transportation is a primary barrier for work opportunities by individuals with disabilities. The 2000 Census showed that only 60 percent of people between the ages of 16 and 64 with disabilities are employed. The New Freedom formula grant program seeks to reduce barriers to transportation services and expand the transportation mobility options available to people with disabilities beyond the requirements of the Americans with Disabilities Act (ADA) of 1990.

Support Public, Specialized Human Services Transit

South Dakota understands the importance of transit in rural and urban areas. South Dakota does not have health care facilities in every community so it is essential for the people in rural communities to have access to health care. The department will support a

Chapter 5: Mobility and Transportation Choice

coordinated system of public, human, and specialized service to provide mobility for all residents.

Support Development of Fixed Transit Services in Urban Areas

South Dakota will support the development and expansion of new and existing transit services in urban areas. Sioux Falls and Rapid City are direct recipients of federal transit funding to operate their fixed transit system. The MPO Long Range Transportation Plans have identified goals and objectives for improving their services and the SDDOT will support their efforts.

Support Rural Transit throughout South Dakota

South Dakota has a low population density, making it difficult to serve the entire state with public transportation. The department fully intends to expand public transportation services into areas without service and improve service in underserved areas of the State within the restraints of available resources. A framework of vehicles and service providers are being developed to establish regional transit systems if sufficient federal funding becomes available in the future.

Chapter 6: Funding the Transportation System

To implement the goals and objectives in South Dakota's statewide transportation plan, funding must be adequate, sustainable and equitable for all users. The future brings funding challenges that are different than in the past and we must look at different ways to fund transportation.

South Dakota's present transportation needs exceed the funding that is available. South Dakota relies heavily on federal funding to provide dollars to fund the transportation system and provide transit services. Federal dollars usually pay 80 percent of federal-aid eligible projects and South Dakota is responsible for 20 percent. State gas tax and motor vehicle excise tax dollars provide the 20 percent match to the federal funding and the also funds maintenance for the transportation system. The funds are collected through the federal and state gas tax and state three percent motor vehicle excise tax.

Funding

There are several different funding mechanisms that can be used to fund transportation and South Dakota's funds come from the following sources:

- ◇ State revenue
- ◇ Federal funding
- ◇ Local funding

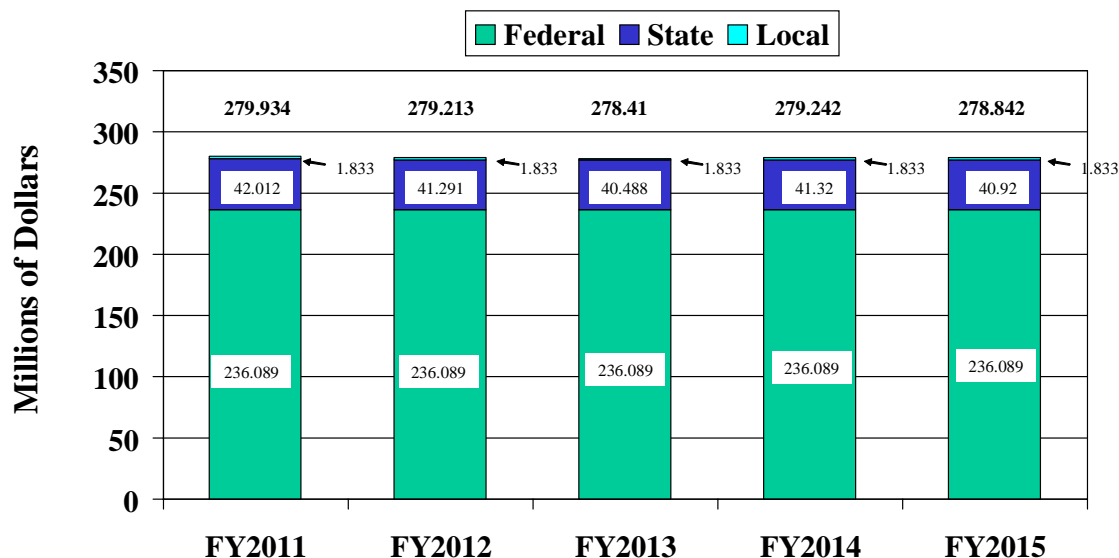
State Transportation Revenue

The majority of the SDDOT's Highway Fund revenue is generated by state motor fuel taxes and state three percent motor vehicle excise tax. The state Highway Fund along with the federal funds, make up the funding South Dakota uses to maintain and preserve the transportation system. South Dakota identifies transportation and transit projects in the Statewide Transportation Improvement Program (STIP). The STIP is the 5 year transportation plan which identifies transportation projects. The STIP is required to be fiscally constrained and is updated every federal fiscal year. State revenue and federal funding commitments for the STIP are provided to show funding is available to build the transportation projects.

The management strategies must be based on financial and political reality. The financial flexibility allowed under SAFETEA-LU is restricted by realistic expectations of future funding. The funding projections in this chapter are based on the projected amount of revenue the SDDOT will have for highway construction and maintenance. The short term funding for the Statewide Transportation Improvement Program is shown in Figure 6-1. This figure projects moderately stable funding for highway construction over the next five years.

Figure 6-1

Estimate of Total Available Funds For FY 2011-2015 STIP



Forecast of Federal Apportionments

TEA-21 tied future apportionments to the funding balance of the Federal Highway Trust Fund. If the contributions to the trust fund increase faster than projected, the revenue increase is distributed to each state according to the funding formulas. If the contributions are less than projected, each state's apportionment is reduced based on the funding formulas. This will insure that revenues to the trust fund will be distributed and not allowed to accumulate in the trust fund.

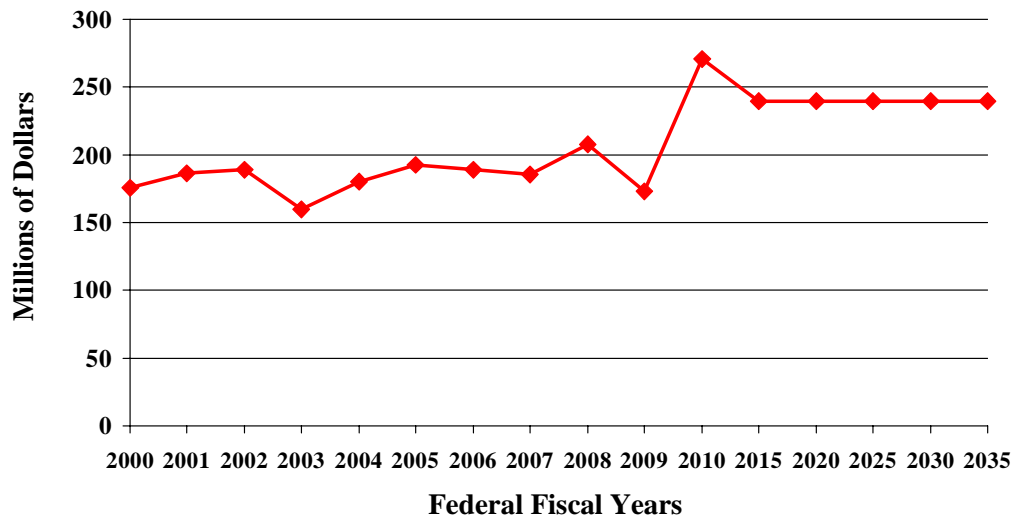
Over the last five years the Federal Highway Trust Fund has diminished to a negative balance and Congress transferred funds from the general fund to bring the fund out of the red and pay for the construction projects. In 2009, SAFETEA-LU expired and the SDDOT is currently working under continuing resolution. A continuing resolution means that Congress extended the current transportation formulas and programs to distribute the highway and transit project funds. They are working on a new bill but are facing challenges never seen before because the highway trust fund revenue is not keeping up with the apportionments to the states.

Chapter 6: Funding the Transportation System

Projecting the federal funding South Dakota will receive is very difficult. Due to the uncertainty of the highway trust fund, we are not increasing Federal fund projections for the next 20 years. We will revisit projections after Congress passes a new transportation bill which will identify future funding for the highway program.

Figure 6-2 depicts the actual federal apportionments from FFY 2000 to FFY 2010 and the projected Federal apportionments South Dakota will receive over the next 20 years. South Dakota is projecting no increases in the federal funding apportionment over the next 20 years. It must be noted that actual obligation authority, what the department is allowed to spend, is less than apportioned funds.

Figure 6-2
South Dakota
Federal Highway Apportionments
2000 - 2030*



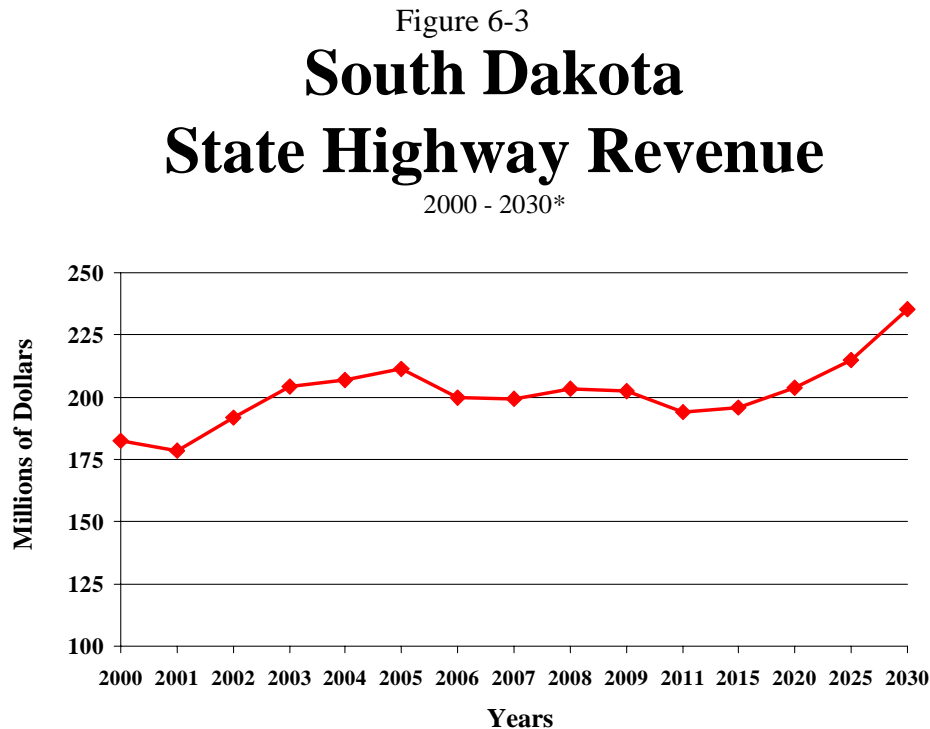
* FY 2015 to FY 2030 are estimated amounts

Forecast of State Highway Revenues

The required state highway revenues to match federal funds are difficult to predict since we do not know the level of future federal funding and the state highway expenditures for the next twenty years. In 2008, South Dakota conducted a Legislative Transportation Needs Study which indicated a need to increase funding to support the transportation system. The committee introduced bills to increase motor vehicle excise taxes, motor fuel taxes, and increase noncommercial license fees, but all were defeated. Based on the historical collection of state highway revenues over the last ten years, it is anticipated that revenue will increase over the next 20 years, but not enough to support the needs. (See

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Figure 6-3) Solutions to finance the needs will have to be addressed by the legislature in the future.



This scenario, along with the estimates of Federal apportionments, is used as a guide to decision-makers to predict what fiscal possibilities might be for the next twenty years. These are assumptions and general resource estimates and must be updated as accurate figures become available because of their impact on decision-making.

New modes of transportation are not foreseen, but more efficient transportation options, alternative fuels, faster rails, and new intermodal technologies are likely. When new technologies become available they need to be justified for efficiency and life cycle costs. The SDDOT must operate within the constraints of fiscal reality. The SDDOT should implement new technologies only if they are efficient solutions to transportation problems.

South Dakotans realize in this sparsely populated state, the marketing lifeline of agriculture and commerce is transportation. When necessary, the citizens have proven they are willing to increase revenues to keep these lifelines operating. The SDDOT will continue to analyze the level of investment that is necessary to preserve the existing intermodal system and sustain the necessary future mobility of people and goods.

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Local Funding

Local funding is used to match federally funded projects constructed at a local level. These projects are usually off of the state highway system and on locally owned roadways. Some project examples where local match is required are:

- Local Urban and County System
- Transportation Enhancements
- Local Bridge Replacement
- Local Roadway Safety Improvement
- Transit
- Special federally funded projects

Examples of local funding sources are local sales tax, general property tax, assessments, bonds, and the general fund. Local federally funded projects are awarded with 80 percent federal funds and 20 percent local funding.

Transit Funding

The SDDOT has been receiving approximately 8 to 10 million dollars to fund rural transit in South Dakota. The department expects the transit funding to remain the same or slightly increase over the next 20 years.

Forecast for Aviation Funding

The majority of the funding allocated for airports is used for airport improvement projects. Presently, 95% of this funding is received from the Federal Aviation Administration (FAA), three percent from the State aeronautics fund, and two percent from the local entity. The federal funding available for airport projects is approximately \$30 million per year. This funding is available in three categories: Discretionary, State Apportionment, and Entitlement. The funding breakdown is \$12 million, \$3 million and \$15 million respectively. In 2009, South Dakota received ARRA stimulus funding of approximately \$12.7 million in 2009 for airport improvement projects.

The State aeronautics fund receives about \$1.5 million annually in revenues from fuel tax, original aircraft tax, aircraft registration, and interest. These revenues are used to fund the state share to match federal funds, State funded projects, allocated fuel tax payments to local entities, and other expenses.

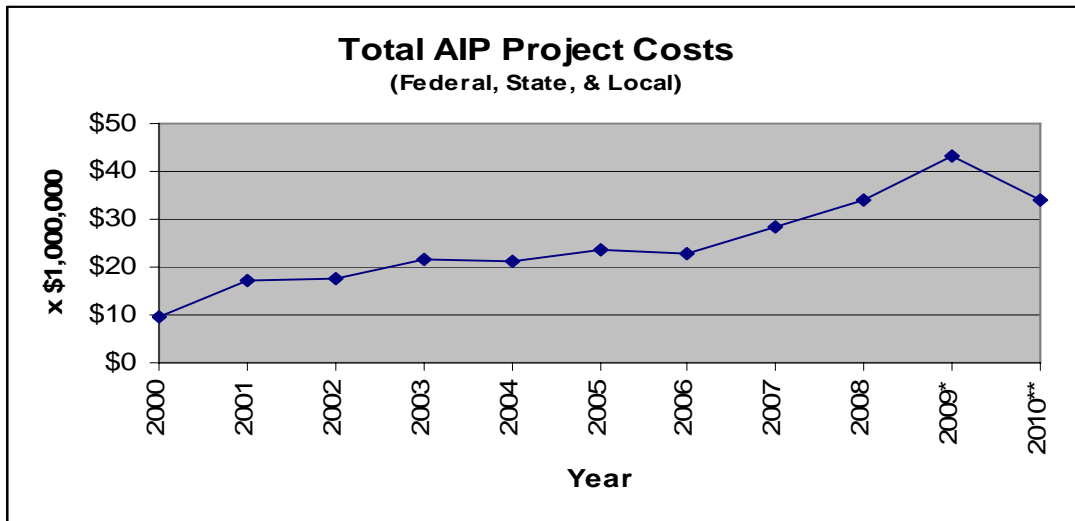
Funding for Federal Airport Development projects is provided in the “Vision 100 – Century of Flight Authorization Act of 2003, Public Law 108-176”. The funding program under this reauthorization was for four years, FY2004 - FY2007. The Airport

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Improvement Program (AIP) is currently operating under a continuing resolution with no future forecast available.

The State Aviation System Plan update will address an overall plan for improvements at public use airports.

Figure 6-4



*Includes \$12.7M of ARRA funding.

**Projected amount.